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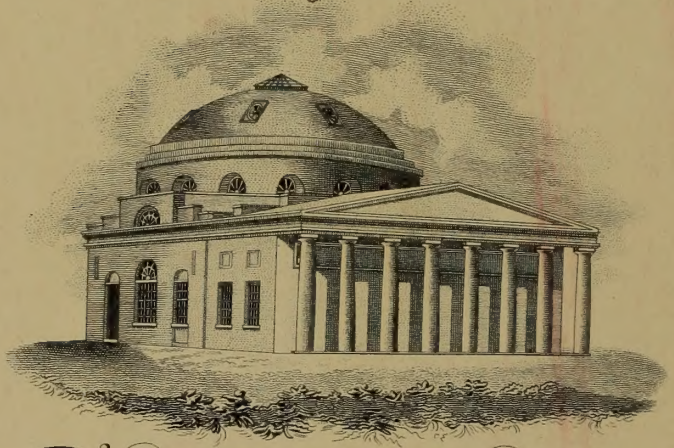

University of Maryland

University of Maryland Theses

Early Doctor of Medicine and Doctor of Physic Dissertations with Corrected Tables of Contents

These manuscripts described as either an Inaugural Dissertation or an Inaugural Essay were presented to the University of Maryland for the Degree of Doctor of Medicine and/or Doctor of Physic during the years 1813-1887. The individual dissertations were bound together during the 1940's. The original tables of contents for the bound volumes contained multiple errors in authors' names, titles, and/or years. To address these errors, an additional "Corrected Table of Contents" has been inserted at the beginning of each volume.

The project team who investigated and corrected the tables of contents were Richard J. Behles, Historical Librarian/Preservation Officer; María Milagros Pinkas, Metadata Management Librarian; Angela Cochrane and Carol Harling-Henry, Resources Division; Sarah Hovde, Abra Schnur and Megan Wolff, Services Division.

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UNIVERSITY OF MARYLAND

THESES

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AN

Inaugural Dissertation

Clinical Cases.

Submitted to the Examination

OF THE

Provost, Regents and Faculty

OF

PHYSIC,

OF THE

UNIVERSITY OF MARYLAND,

FOR THE DEGREE OF

DOCTOR OF MEDICINE,

By

Harrison Tongue

Of

Anne Arundel Co. Maryland.

Session of 1841

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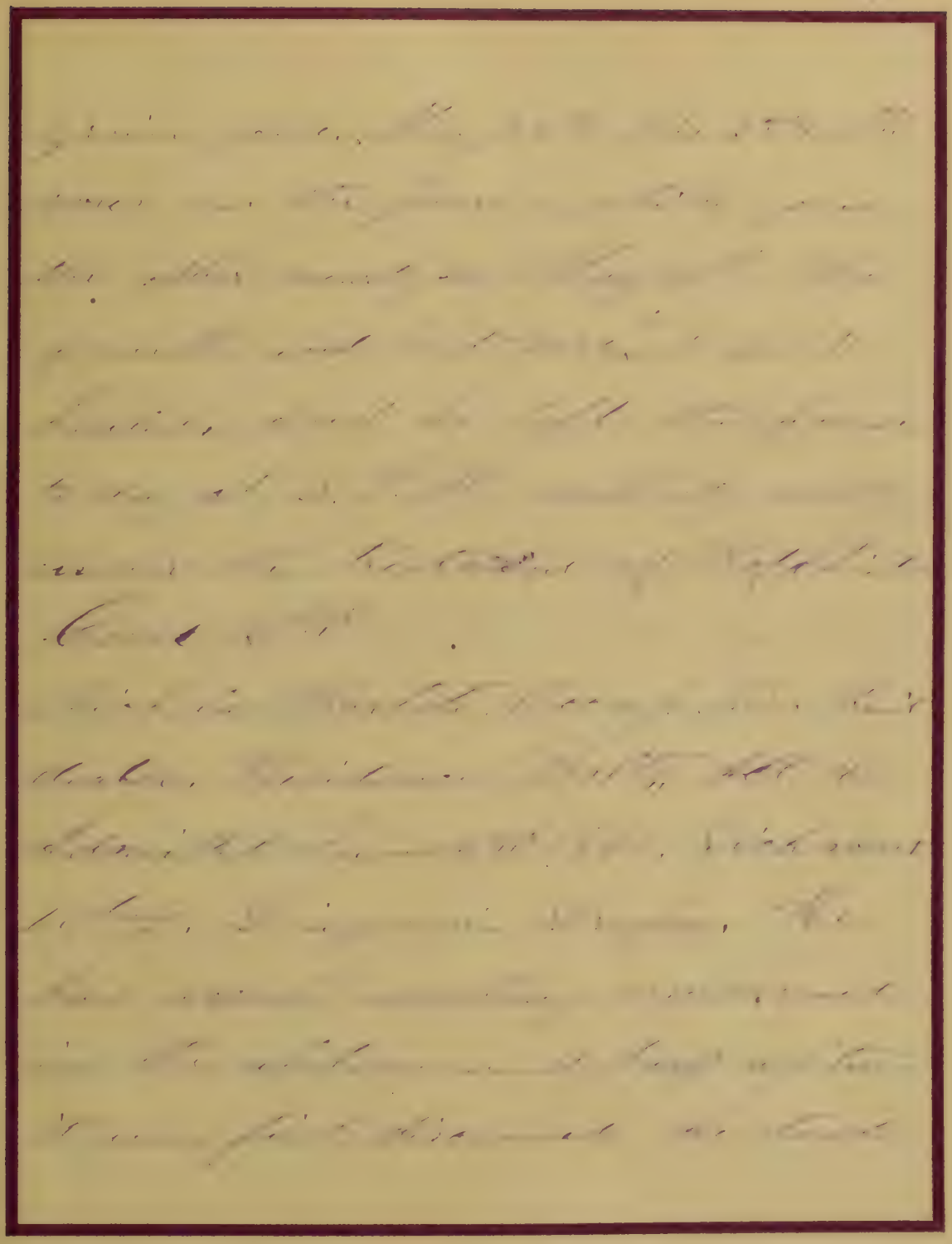

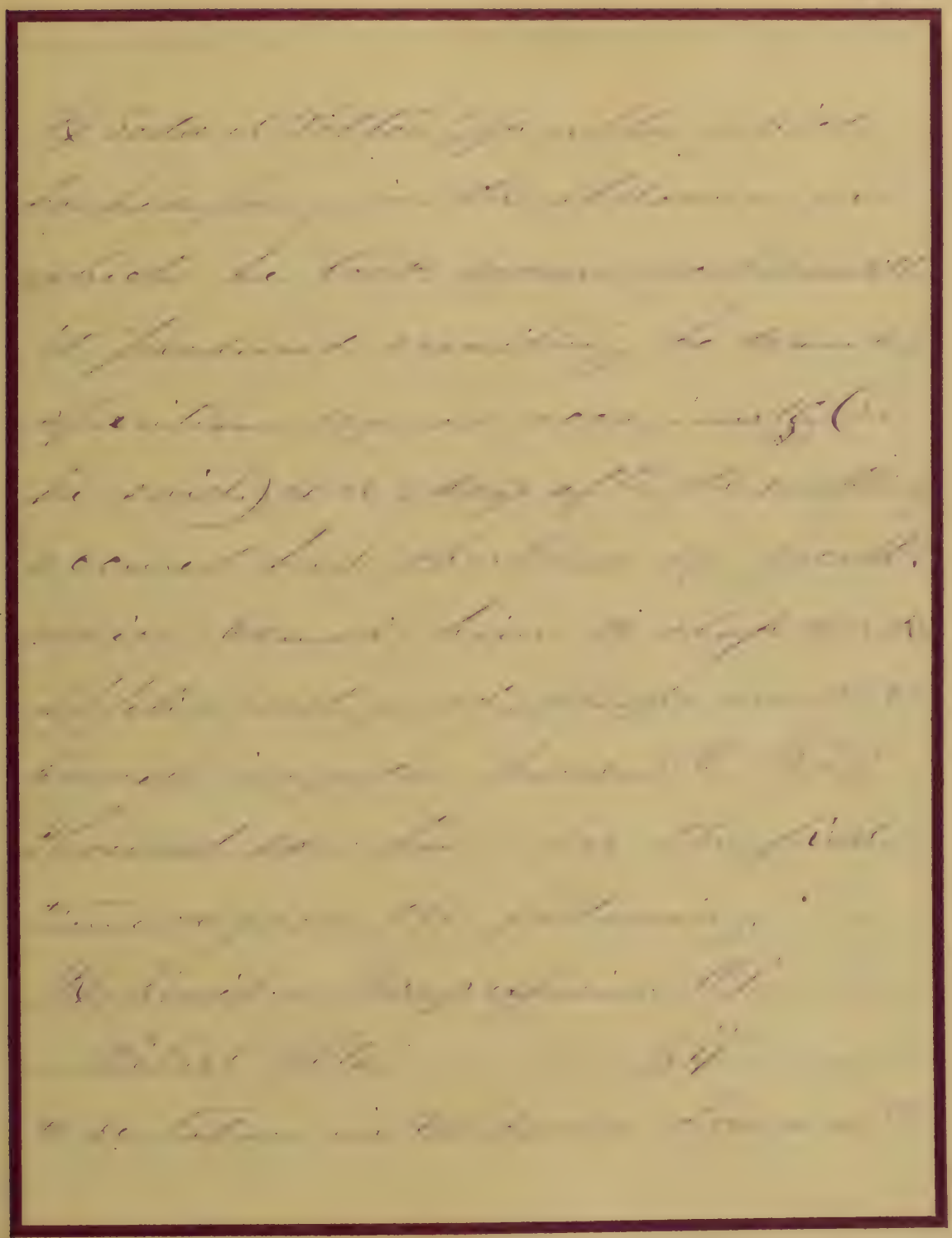

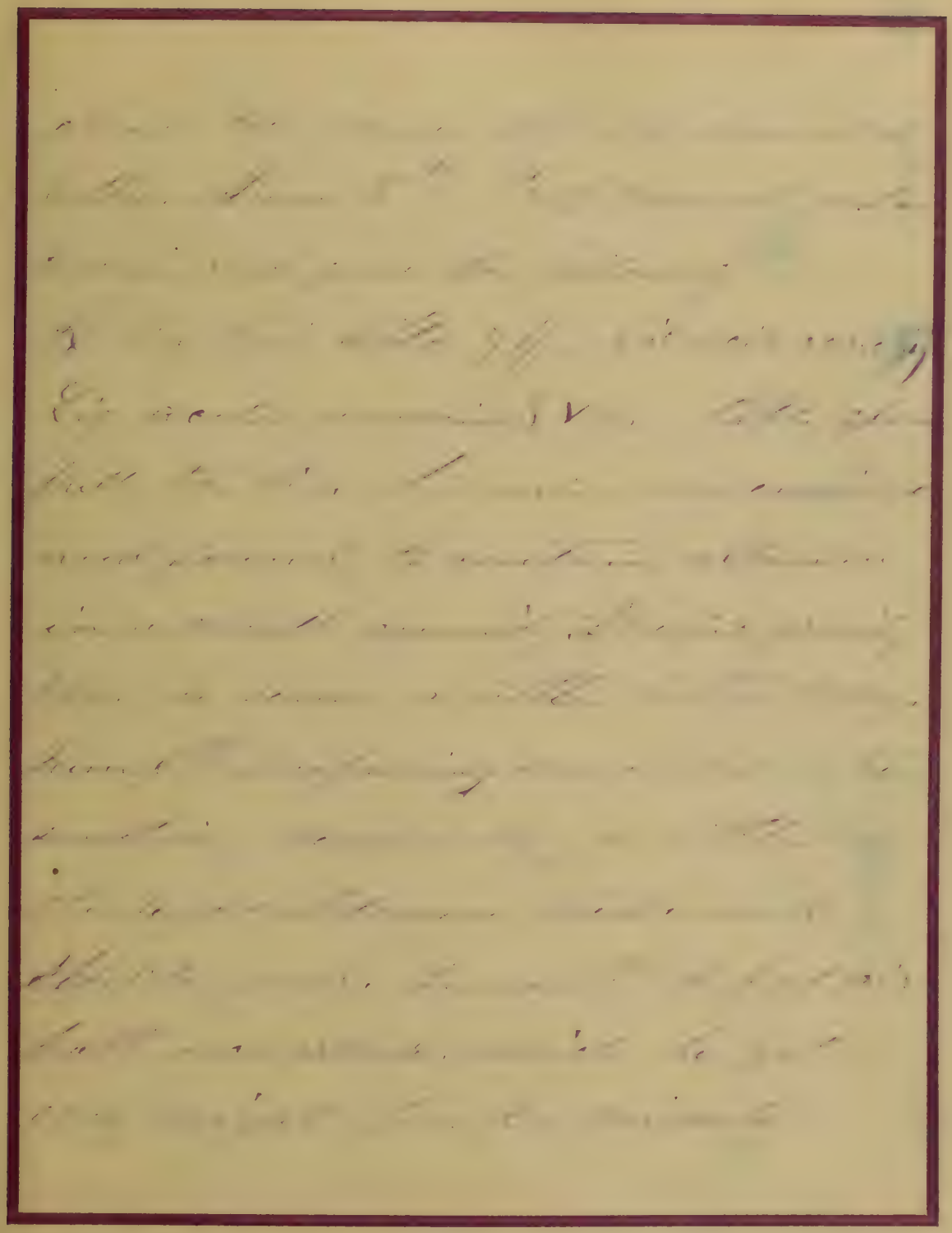

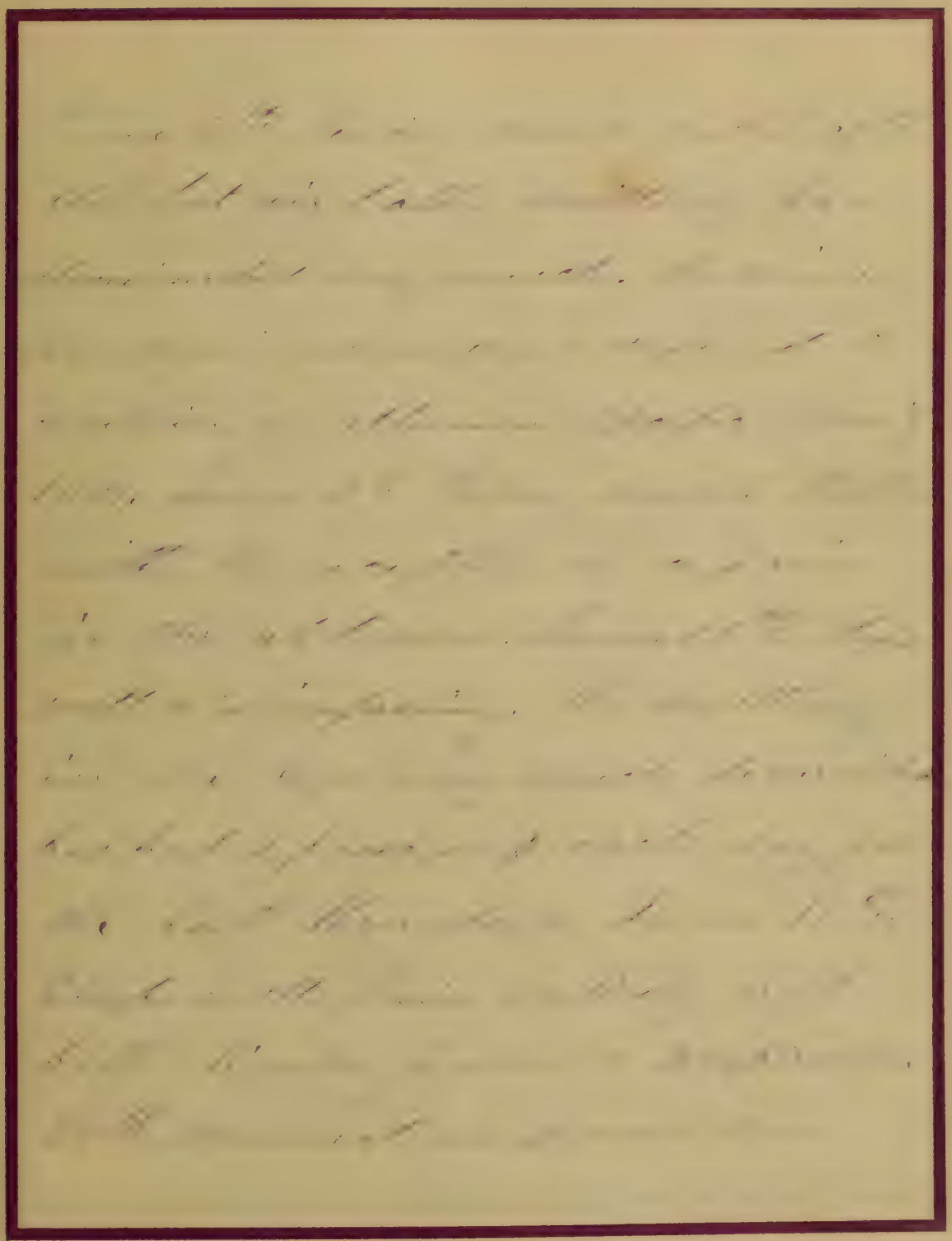

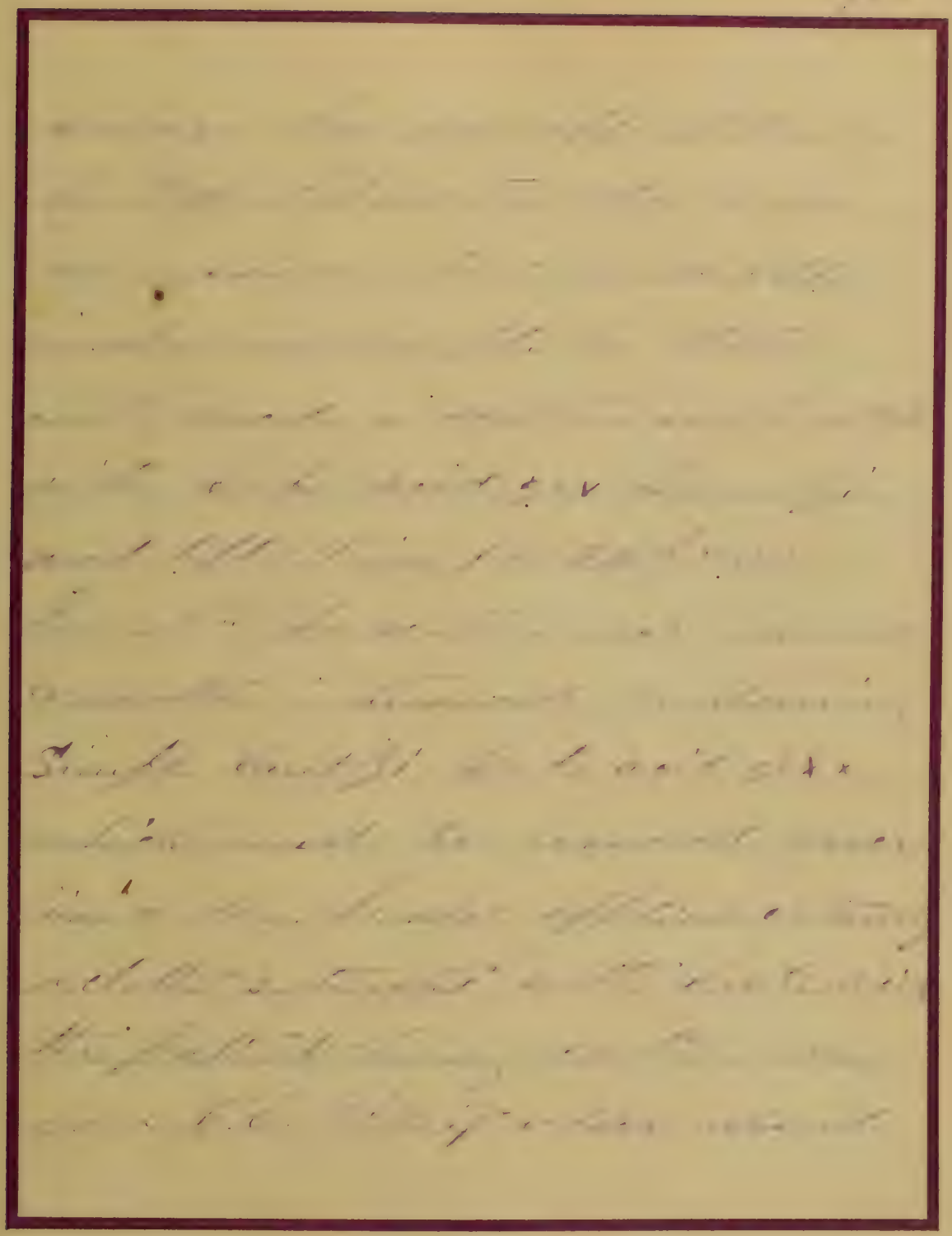

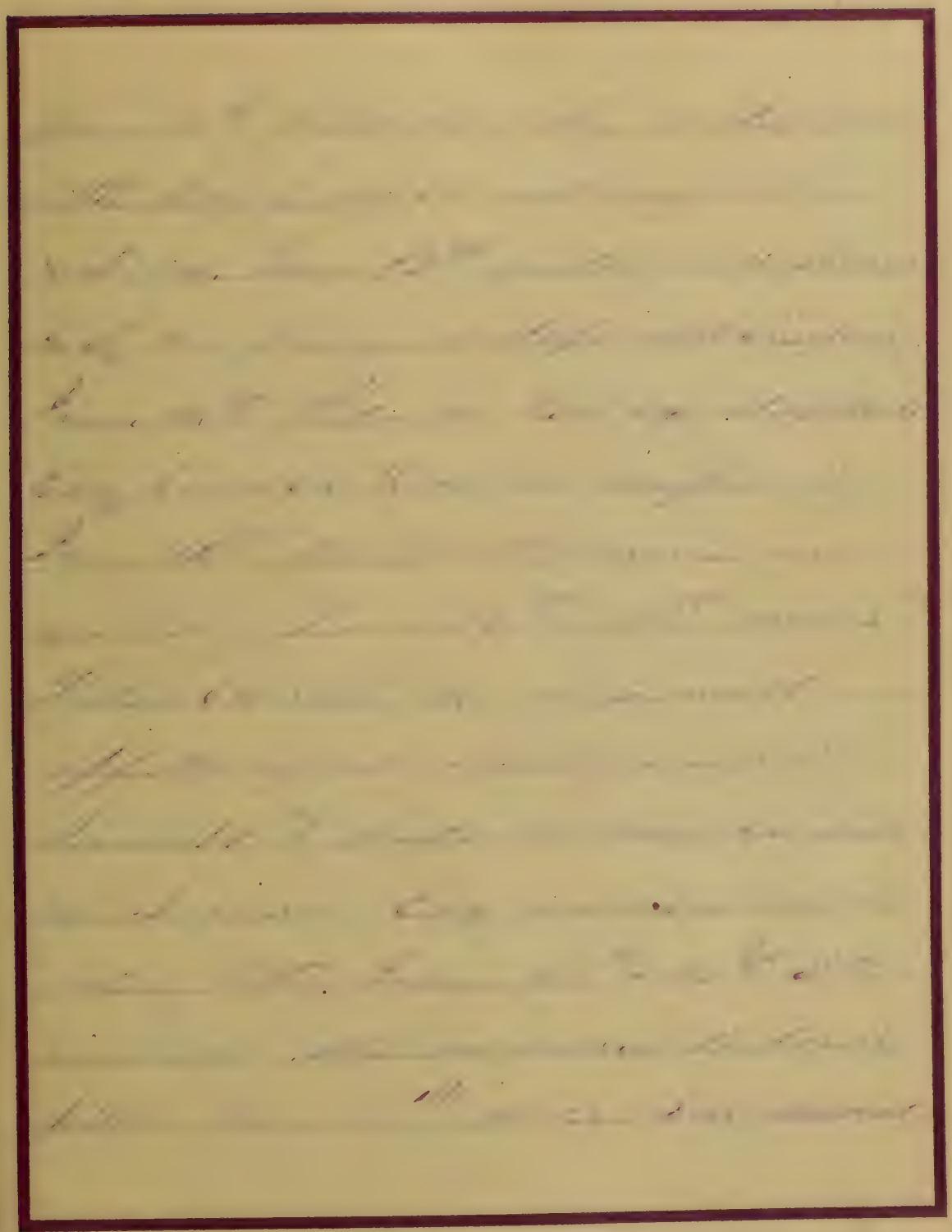

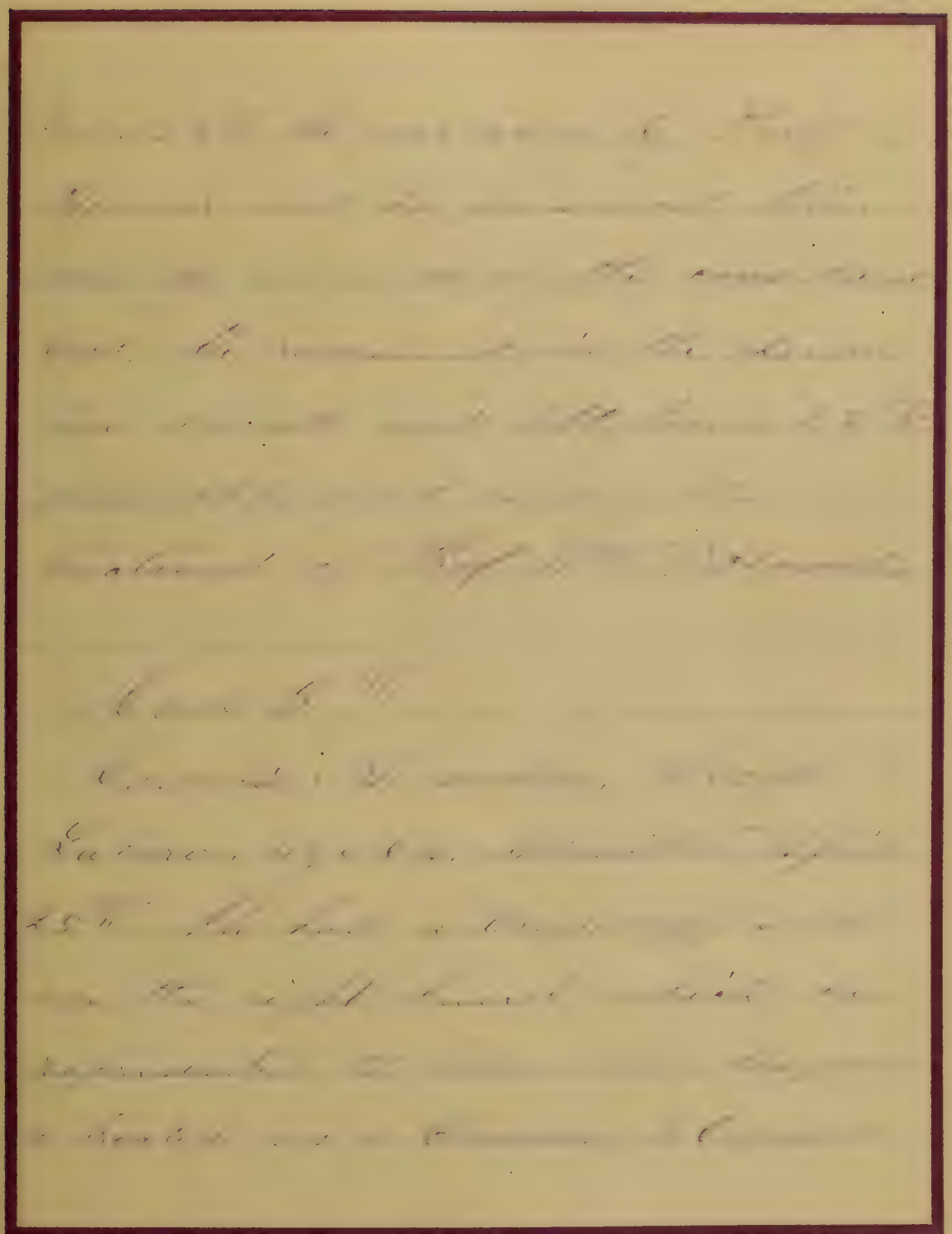

[illegible]

Resid[illegible] [illegible] 31, admitted
September [illegible] [illegible]
Diagnosis Syphilis. When he
entered the [illegible] [illegible]
[illegible] with phimosis but
had no sore experiencing to the
phimosis, he [illegible] great discharge
from the mouth of the prepuce,
and swelling in both groins.
He was treated by Dr. Harden before
he came to us. Dr. Chisolm saw
him for the 1st time on the
[illegible] Sept & gave the following
℞ Alumina gr xx. Aqua [illegible] [illegible]

injection under the prepuce, & another as a lotion ℞ Acetas Plumbi ʒi & Tin Opii ʒi. Sept 11th Prepuce begins to ulcerate on the top of penis. Sept 11th Penis much swollen & very sore. The swelling in the groins diminishing. Sept 12th The prepuce very much enlarged. The above prescription stopped & the following given. ℞ Tin Opii gr. Agem ℥ ij as a lotion, internally ℞ Pulv Nit gr v ter die in water. Sept 13th No improvement prepuce has ulcerated through, and gives excessive pain

AN

Inaugural Dissertation

ON

Diphtheria.

Submitted to the Examination

OF THE

Provost, Regents and Faculty

OF

PHYSIC,

OF THE

UNIVERSITY OF MARYLAND,

FOR THE DEGREE OF

DOCTOR OF MEDICINE,

By

J. W. S. Jordan

Of

Baltimore, Maryland.

Session of 1871

Gentlemen

According to a custom of long standing in this University, I have the honor of presenting to your notice, a Thesis on the Subject of

Diphtheria.

In speaking of diphtheria, I shall confine myself to that disease as it prevails on this continent. Upon the history of diphtheria very little is said by medical books. With the exception of a paper by Dr. Douglas of Boston in 1736, in which he gives an account of the first appearance of a "Sore

throat distemper" in this country
a letter to Dr. Fothergill from Mr.
Cadwallader Colden concerning
the throat distemper, and the
writing of Dr. Samuel Bard of
New York, there is nothing to in-
dicate that it has ever occured
as an epidemic previous to 1831,
when Dr. Bell speaks of its having
occured as an epidemic in
Philadelphia. Then we hear
nothing more of it, until 1856,
when it broke out in Califor-
nia. During the interval we
have mentioned i.e. between 1831
and 1856, we may have overlooked

some sporadic cases, but certainly no epidemic occurred.

The following description of the disease is given by Mr. Colden in his letter: "The first appearance of the disease was at Kingston, an inland town of New England about 1735. It spread from thence gradually westward, so that it did not reach Hudson's River till nearly two years afterwards. It continued on the east side of Hudson River before it passed to the westward, and appeared first in those places to which the people of New England re-

sisted for trade, and in the places through which they travelled. It continued to move westwardly, till, I believe, it has at last spread over all the British colonies on the continent. Children and young persons were only subject to it, with a few exceptions of some above twenty or thirty, and a few old people who died of it. The poorer sort of people were more liable to have the disease than those who lived well, with all the conveniences of life, and it has been more fatal in the country than in great towns."

In 1858 it made its appearance at New Orleans, Chicago, and Albany almost simultaneously. In the last named place so severe was the epidemic that 179 died within the limits of the City, in less than a year, of these but three were adults, the remainders were mostly children under twelve years of age.

From this time it seems to have gradually extended over the country, for we hear of it in Cincinnati, and some of the New England states, although ~~although~~ it was not very extensive early in

the same year. But it was not until 1860 that it came to be generally prevalent throughout the country, and to carry terror to the inmates of every hamlet. During this year we have it reported in most of the Southern and Western states; but not as extensively as in the Middle and Eastern states.

Anatomical characters.

The presence of the false membrane, is the characteristic feature of the disease. The first appearance of the disease is redness of the fauces, accompanied by more or

less swelling of one or both of the tonsils. The exudation, at first thin and semi-transparent, becomes opaque and more or less thick. The lymph is deposited successively in layers, forming a stratified false membrane. This is ash colored, but it may become dark or even black. The patches of exudation present well defined abrupt margins. With the forceps the false membrane may be detached in strips, and the mucous membrane beneath is simply excoriated, or deprived of its epithelium. Frequently

bloody points are apparent on the surface from which the membrane has been detached. The false membrane, when thick, loose and dark or black, presents an ulcerated or gangrenous appearance. Sooner or later, if life be sufficiently prolonged, the false membrane is thrown off. The exfoliation sometimes takes place, in three or four days, and it is sometimes delayed, even to twenty days. Sometimes the exfoliation of the first membrane is followed by a second, third and even by a fourth membrane.

The lymphatic glands of the neck, and especially those behind the angle of the lower jaw, are more or less enlarged, painful, and tender in the great majority of cases. As a rule the amount of enlargement corresponds with the affection within the throat. The glandular affection rarely proceeds to suppuration. In mild cases of diphtheria, the disease manifests itself locally in the fauces alone, but in cases of more severity the diphtheritic affection extends into the anterior and posterior nares,

the Eustachian tube, the mucous membrane of the cheeks and gums; the eyes are sometimes invaded. The membrane sometimes invades the oesophagus, and may extend to the stomach. A more serious extension is into the larynx, when the membrane may extend into the trachea, and even as far as the small bronchi.

The parts communicating with the fauces are not the only parts liable to be affected. The meatus auditorius externus, the anus, the vulva, and prepuce

are sometimes affected. The skin in parts excoriated, is sometimes invaded by the membrane. Morbid appearances of internal organs, which may be found after death, are due to coincident affections or complications.

Clinical History.

Some writers have divided diphtheria into different varieties as - Diphtheria simplex, Diphtheria maligna and Diphtheria trachealis, but this division we deem unnecessary. There is a marked difference in the development of the disease. Sometimes the attack is acute.

commencing with a chill, follow
by high febrile excitement. In other
cases the disease creeps on insidi-
ously, the patient complaining of
various ailments, but no symptoms
pointing to the disease until
the throat is examined, when the
membrane is discovered. The in-
itiatory symptoms have no definite
relationship to the severity of the
disease in the future. After the
disease is developed the symptoms
are both general and local.

The general symptoms embrace
symptoms referable to the circula-
tory, cutaneous, urinary, digestive,

respiratory, and nervous systems. The pulse in some cases is very frequent; in other cases it is moderate or slight. In the course of the disease the pulse is sometimes at first more or less rapid, and then suddenly falls below the average of health. The pulse is soft and compressible, and sometimes irregular, a very unfavorable symptom if independent of pre-existing organic disease of the heart. Dangerous epistaxis sometimes occurs; hemorrhage sometimes occurs from the throat. Hemorrhage is an unfavorable symptom

and should be regarded as ominous.
In some cases the skin is hot, in
some natural and in other cases
it becomes cool or cold. The disease
has no characteristic eruption, pe-
techial spots are sometimes observed,
occuring generally in connection
with hemorrhage from mucous
surfaces. In grave cases the skin
presents an anaemic aspect, even
when hemorrhage has not occured.
In the cases where the air-passages
become affected, there is more or
less lividity of the surface.
Albuminuria is a frequent symp-
tom. It occurs in nearly half the

cases. It is only of recent date that the attention of the profession has been called to this symptom in diphtheria. It was first observed by Wade in 1857. Hæmaturia has been observed in cases presenting the symptoms of purpura. Clinical observation has, as yet, furnished nothing else worthy of note.

The desire for food is either notably diminished or lost. There is great difficulty and pain in deglutition, and children have often to be forced to take nourishment or drink. There is often a stag-

nance for food. Vomiting is a frequent and sometimes a prominent symptom. Diarrhoea sometimes occurs, and is a bad symptom. If the membrane extend into the oesophagus, it is expelled by vomiting in the form of ribbons.

The respiratory symptoms are due to diphtheritic inflammation of the larynx, trachea, and the bronchial tubes; we will refer to these when we speak of local symptoms.

The mind is unaffected in the majority of cases. Passive and sometimes active delerium occa-

usually occurs. Active delirium denotes great gravity of the disease. Convulsions, and coma rarely occur. Coma is the forerunner of death. Uraemia is probably the cause of the coma and convulsions. We will next refer to the local symptoms. The disease may be mild or severe. In the mild cases the exudation is confined to the fauces. In the severe cases the exudation extends into the nares, mouth, oesophagus larynx, and bronchial tubes. When it invades the larynx, it is known as diphtheritic croup. The affection of the fauces is seldom accom

panied with much pain or soreness, hence its existence is liable to be overlooked. Deglutition is sometimes difficult and painful, but in other cases attended with no pain. If the exudation be loose, pharyngeal rales with respiration occur, especially during sleep. In some cases the breath is fetid, suggesting the idea of gangrene of the throat or lungs. When the exudation extends over the buccal mucous membrane, there is more or less pain in eating or drinking, also ptyalism, and stiffness of the parts involving difficulty of artic-

ulation and absence of taste.
When the nares are affected, a dis-
charge is produced which irritates
and produces swelling of the upper
lip. The diphtheritic inflamma-
tion on a mucous surface in
other situations, and on the
skin, gives rise to pain and sore-
ness, and is attended by a sero-
purulent discharge, frequently
ichorous, and sometimes fetid,
gangrene and ulcerations oc-
curring very rarely. As a rule
the gravity of the disease is com-
mensurate with the extent of the
local affection and the abundance

of the exudation. It does not follow from this fact, that the gravity depends on the local affection, for the local affection depends on the constitutional.

When the exudation invades the larynx, the symptoms are those of true croup. Embarrassed and stridulous respiration, croupous cough, and aphonia, point to the invasion of the larynx. Swelling of the tonsils pharynx may be sufficient to occasion some obstruction to respiration. Laryngitis is to be excluded as long as the voice remains unaffected. Diminished respiratory murmurs

and embarrassment of the respiratory function out of proportion to the amount of laryngeal obstruction with the presence of mucous bronchial rales, denote an extension of the membrane to the bronchial tubes.

The duration of the disease is from one to two weeks. In fatal cases the duration may fall short of a week, death taking place sometimes within forty-eight hours. On the other hand the disease may last for an indefinite period, owing to complications or sequels. Pneumonia and anasarca are complications.

Diphtheritic sequelæ form an important part of the clinical history. Paralysis, dullness, anæmia, and feebleness of the hearts action are the most frequent. Of these, paralysis is the most characteristic. The muscles of the soft palate and pharynx, are most frequently affected, and paralysis here generally precedes its occurrence in other places. If there is slight paralysis in this situation, deglutition is difficult, and there is regurgitation of liquids through the nares. In severer forms of this disease,

food may have to be taken through the stomach-tube. The palate is affected in such a manner, as to hang motionless when pricked. The existence of paralysis in these parts is indicated by a nasal intonation of the voice, and sometimes a snoring sound in respiration. The tongue and muscles of the face are sometimes affected, so that articulation is difficult, and the act of gargling impossible. The paralysis is sometimes limited to the muscles of the palate, pharynx, and mouth, but sometimes it extends to other muscles. The

lower limbs are most apt to be affected. The paralysis is developed gradually, and is preceded by tingling, numbness, and a sensation of coldness. The paralysis, may be complete or of different degrees of incompleteness; it sometimes assumes the form of hemiplegia, and various other forms. The paralysis sometimes affects all the voluntary muscles and some of the involuntary. Such cases however are very rare.

In connection with the paralysis of motion, the sensibility in the affected parts is often diminished

or increased. The special senses are liable to be affected, more especially the sense of sight. The most frequent disorder is presbyopia. The other special senses are sometimes affected but rarely as compared to the sense of sight.

The paralysis sometimes affects the intercostal muscles and diaphragm, the muscles of defecation, the bladder, and the sphincters. Notable impairment or loss of virile power may be here mentioned as one of the sequels of diphtheria. The paralysis in the different situations is fre-

tional. Recovery may be confidently expected in the course of a few weeks or months. As regards the frequency of paralysis, more or less impairment of deglutition is common, disturbance it occurs in the minority of cases. Segular may occur in mild as well as in severe cases.

Diagnosis.

Prior to the appearance of the membrane, there are no distinctive traits, and the local symptoms are preceded by constitutional symptoms for a variable period. These symptoms are sometimes

slight, but in some cases violent.
The diagnosis is sufficiently easy
when the local manifestations
have taken place. A liability to
error is with the follicular se-
cretion in some cases of Pharyngitis.
The latter is a pultaceous deposit,
not membraniform, nor remov-
able in strips or patches, and may
be seen to dip into the follicles.
The exudation is an essential
diagnostic criterion. Ordinary
sore throat with more or less con-
stitutional disturbance, which
is of frequent occurrence when epi-
demics of diphtheria prevail,

is doubtless due to the epidemic influence.

Another liability to error is in the case of true croup. The latter affection is identical with diphtheria in so far as the inflammation is characterized by the exudation of lymph. Other circumstances, however, show the non-identity of the two diseases. In true croup, the exudation forms in the larynx, it does not extend into the nares or oesophagus. In true croup, there is no enlargement of the cervical glands, there are no constitutional symptoms

other than those symptomatic of the local affection; there is no fetid breath. Primary croup is a sporadic disease, diphtheria is an epidemic, as a general thing. True croup affects exclusively children, diphtheria sometimes attacks adults.

Diphtheria has been by some considered identical with scarlatina. The non-identity of these affections is shown in various ways: in scarlatina there is an efflorescence, which is absent in diphtheria; scarlatina is developed rapidly, and diphtheria gradually

There is often an extension of membrane into the larynx, in diphtheria; in scarlatina this rarely occurs. The sequels of scarlatina, Albuminuria and general dropsy, rarely follow diphtheria, and the sequel of diphtheria paralysis, rarely follows scarlatina. A diphtheritic affection of the throat, however, occurs as an element of scarlatina, and the two affections may exist in combination.

Causes.

Diphtheria is an epidemic disease rarely occuring sporadically, and like

other epidemic diseases, it has its special causes. Is the disease communicable? is a contested point with the profession, some taking one side, and some the other. The disease is now generally held to be contagious. At any rate, it should be regarded with caution, and measures taken to avoid needless exposure. Epidemics are irregular in their occurrence, and in the extent of country which they invade. The disease is not equally susceptible in all periods of life. In the majority of cases, patients are between three and twelve years. Persons however of any age may be

attacked. The number of females exceed the number of males, attacked. In respect of variations at different times and places, diphtheria resembles other epidemic diseases.

Prognosis.

Statistics, communicated by different observers, showing the rate of mortality from diphtheria, present a very wide range of variation. Without attempting, therefore, to express the average death-rate in figures, it will suffice to say that it is sometimes very large and at other times comparatively small.

The danger is first, from an invasion of the larynx, the vast majority ending fatally. Apnoea either causes or contributes to the fatal result whenever the larynx is invaded. The danger in diphtheritic croup, is diminished after the first week, although the patient is in danger, so long as the disease continues. The danger is, secondly, from asthenia or exhaustion. The violence of the attack may destroy life within forty-eight hours or earlier. In these cases the disease is truly called malignant. But in the large majority of cases, the powers

of life are gradually exhausted, and death takes place in the second week. The prognosis is always unfavorable if the exudation extend from the fauces, into the posterior and anterior nares, if it pervade the buccal cavity extensively, or if it exist abundantly in other situations. Frequent vomiting, diarrhoea, hemorrhage, coldness of the surface, abundance of albumen in the urine, great frequency, feebleness, and especially irregularity of the pulse; convulsions delerium and coma, are unfavorable prognostics signs. A fact to be born in mind, is the liability

to sudden and fatal syncope, which is induced by blood-clot in the heart. The paralysis of which there is liability in every case, does not involve danger, as a general rule. The only danger is, when the muscles of respiration or deglutition are involved.

Treatment.

We will divide the treatment of diphtheria into constitutional and local. With reference to the local treatment the profession is divided, some being for the use of caustics, and others against their use. We will side with those who use caustics combined with other local

applications. For instance we would touch the patients throat with, Bromof Zinc. Iodide of Zinc. Bromof Soda, the mineral acids, carbolic acid or, preferably, nitrate of Silver grs. xx to the ounce. We would touch the patients throat once a day with the caustic, and during the intervals, use a gargle of Chlorate of Potash Laurain, glycerine, and water. Ice may be used if necessary small pieces being placed in the mouth and allowed to dissolve. If there is much fetor of the breath a solution of tar per

manganate of Potash or carbolic acid may be used.
External applications are as a general rule unnecessary, but if any are used they should be mild liniments and warm poultices, counter-irritants, such as Capsicum being pernicious.
With reference to the general treatment the profession is now nearly united in the belief, that the supporting treatment, is the treatment. It is to be considered, that the disease is not controled by any known specific remedy, and in view of this fact,

and also of the danger being from asthenia, the great object of treatment, is to support the system, so as to keep the patient alive, till the career of the disease is ended. The therapeutic measures to be used are, tonics, stimulants, and alimentation. The great therapeutic measures are:- Gr. Ferri. Chlor. Chlorate of Potash, and Quinine. Much importance is to be attached to alcoholic stimulant employed with proper discrimination. The principles which should govern their employment is the same as in all diseases which

have a tendency to destroy life by asthenia. Elimination is an essential part of the treatment. The diet should be concentrated and highly nutricious, as milk and animal essences. In some cases there is such a repugnance for nutriment that the patient can not be prevailed upon to take food. In such cases enemata of beef essence, one to two oz. Symptoms incidental to the disease should be treated as they make their appearance.

The treatment of cases where the larynx is involved, is the same as when it is not involved, but

Besides this treatment, we must employ measures to hasten the seperation of the false membrane. The most efficient of the measures for this end, is the inhalation of steam. Another efficient remedy is the strong Sol. Ferri. Chlor. applied locally to the membrane.

The question will often arise: Is tracheotomy advisable? If we ask the question, are lives ever saved by the operation? we will be answered in the affirmative. And since lives have been saved by tracheotomy, or laryngotomy, the patient is entitled to the

chance of being saved by an operation, however small that chance may be. At what time should the operation be performed?

"So soon as the persisting obstruction, that is, the obstruction due to the exudation, compromises respiration sufficiently to render it probable that the patients life will not be prolonged until the separation of the membrane can take place the operation is called for."

If the operation prove unsuccessful it diminishes greatly the suffering from obstruction, and is fully justifiable.

A

Inaugural Dissertation, on

Veratrum Viride,

Submitted to the Examination

of the

Provost, Regents, and Faculty,

of

Physic,

of the

University of Maryland,

for the Degree of

Doctor of Medicine.

By

Lawrence V. Sloan,

of South Carolina.

Session of 1871.

Veratrum Viride or American Hellebore

It is an indigenous growth of the U.S. is found principally in the low and swampy lands between Canada and Georgia. It is an annular growth of a long straight stem from three to six feet high, with long oval leaves diminishing in size as they ascend. The root contains its principal medicinal properties, which is extracted by alcohol or water. It is generally used as a tincture, but may be used as an extract, or in substance.

It has a burning acrid taste, and leaves a tingling sensation in the mouth and fauces. Its powers are much impaired by heat. I cannot gather from the different authors the exact theory of Veratrum Viride, but believe it was first brought to our notice by Dr Bayard of Sugamoth Sa in 1811, when he used it very successfully in gout and rheumatism. And from shortly after that time, it was brought into more general use by Dr Tully & Osgood. But by latter discoveries we see that they were not thoroughly acquainted

with the therapeutical application and the diagnostic and prognostic results of Veratrum Viride, but still their ideas as to its action are held to by the majority of physicians of the U.S. for the want of practical experience. Dr Tully states that its action is analogous to Veratrum Album, Colchicum and Bloodroot, and that its most important action over the system was its deobstruent action, but as it is not a hydragogue, or a Chylogogue Cathartic, it must have decidedly the advantage over these too or three agents, for colchicum

is not a hydragogue cathartic, but a chylagogue cathartic from the white and frothy operations which clearly satisfy us that the chyliferous organs are operated on, and shows why if colchicum is pushed to catharsis it is the most exhausting of all cathartics. One sure Veratrum Viride presents no such results, nor of a purgative character either nor have never heard of its administration as a purge. its most active principle is not veratrian. Its principal action is as an arterial sedative. The dose of Veratrum Viride is from

iij to v gtt to an adult, and may be increased to eight or ten drops, for children, diminish the dose in the same proportion as in opium, - it is best to give it with whiskey or some other alcoholic stimulants to hasten the effect. - and of any of the apparent symptoms of narcotism such as nausea, vomiting, vertigo, dimness of sight, or impaired muscular ability, present themselves. all such symptoms can be quieted in a very few minutes by the administration of a dose of opii, or some of its preparations, it is a perfect antidote.

Ob do not believe it to be the poison that it has the wide spread reputation of being, for if it was such a poison does could all the poisonous symptoms be relieved in such a credulous space of time as thirty minutes: why don't all antidotes act in such a decided specific manner? I will enumerate some of the effects mentioned by Dr Sally 1st its deobstruent or purgative action, 2d narcotic 3d emetic, 4th epispastic, and lastly errhine. These ideas are still believed and practiced by many physicians not knowing its most important

action, that is produced over the circulatory System, it certainly has a decided influence over the circulation also a very unique one, there is no medicine in materia medica that has the same decided action over the heart's action, and at the same time so limited, it will reduce the pulse from 10 to fifty per minute, and the volume will be increased.

I've given it to patients with a small and frequent pulse, ranging from one hundred and fifty to one hundred and ten, with the skin hot and pungent, prostration

excited and painful, and in
four or five hours the change
would be wonderful, the pulse
would be down to seventy, full and
regular, the skin moist and cool, and
the respiration normal and easy.
I've seen this revolution of symptoms
in many instances, but have never
yet seen the symptoms mentioned
by some, such as narcotism produces
nausea, vomiting, vertigo, dilatation
of the pupil, dimness of sight or
impaired muscular action. These
same effects may be produced by
depletion, and surely there is no

-ocations in bloodletting. — We
never heard of its administration
as a diuretic. Some of the [illegible]
symptoms [illegible] [illegible]
[illegible] by the administration of
successive large doses, are such
that are not classified as [illegible].
I only ask [illegible] my [illegible]
attentions is to the action and
history of Veratrum Viride, because
I believe it to be a very valuable
medicine, very much underrated."
We are indebted to the [illegible]
-ied applications and experim-
-ents of Dr. W. C. Norwood of S. C.

for the information of the action of Veratrum Viride.—

Dr. Norwood was called to see my father in 1864 with a profuse hemorrage from the lungs with an advanced attack of pneumonia his pulse had been for several days from one hundred thirty to one hundred and forty beats per minute with all the usual signs of pneumonia, both lungs seriously involved. Dr Norwood gave a dose of v. th. of Veratrum Viride, and directed if another hemorrage should occur, to give a teaspoonful of Spirits of

turpentine in a wineglass of sweet milk, and to repeat as often as possible until the hemorrage ceased (if an active hemorrage) and if he had any desire to cough, to give some camphorated clovers powders of his own preparation, which was strongly impregnated with opium, and to continue the Veratrum viride dose every three hours, he also placed a fly blister upon his breast, extending from the sterno-clavicular articulation down to the epigastrium, and to let it remain five or six hours, or until it had drawn well, and then

Remove the blister and dress with cabbage leaves steeped in hot water. He rested well until one o'clock P.M. when the blister was dressed. He resumed his seat until evening, and to my great joy and surprise he said he felt much better and wanted something to eat, which he had a disgust for, for several days past. He improved from that time until he was well again. And the only treatment I remember of, was the camphorated tinctures, Veratrum Viride and Stramonium, with hygienic treatment.

During the past year I went with my preceptor, to see a case of complicated pneumonia and bronchitis. The patient was a delicate female, about 45 yrs of age — anemic — the whole of the right lung involved pulse small and frequent, beating at the rate of one hundred and seventy per minute. The following prescription was ordered. Veratrum Viride iij gth every three hours, which is the proper interval to give it, increasing one drop at each successive dose, until the pulse was reduced to seventy per minute — if any nausea

was produced, a full drink of
whiskey to be administer'd, at the
same time, v gr of Pulv. Ipecac. et
Opii, was to be given every six hours,
[illegible]
[illegible] was employed.
[illegible] about 24 hrs [illegible]
[illegible]
[illegible]
[illegible]
[illegible]
was exceedingly anxious, and
she [illegible]
[illegible]
[illegible]

AN

Inaugural Dissertation

ON

Asthma

Submitted to the Examination

OF THE

Provost, Regents and Faculty

OF

PHYSIC,

OF THE

UNIVERSITY OF MARYLAND,

FOR THE DEGREE OF

DOCTOR OF MEDICINE,

By

William H. Norris

Of

Maryland

Session of 1870-71

Dedicated to

Prof Frank Donaldson

as a small tribute of esteem

for the invaluable assistance

rendered to the Author, in his

pursuit of Medical Knowledge

Asthma

Having chosen the above as a fit subject for my Thesis, I shall in pursueing my subject refer to the Anatomy of the organs most concerned in the disease often shall endeavor to give a correct and minute account of a case which for the last twelve years has been under my direct observation -

In the beginning the question "What is Asthma?" comes up & in answer we will give the following Definition

Asthma is an obstruction of the smaller bronchial tubes from tonic

tonic spasm of the muscular fibres forming a part of the anatomical constitution of the tubes -

The Trachea and larger Bronchial tubes are composed of incomplete cartilaginous rings placed at nearly regular distances & contained in a fibrous membrane in the bronchial tubes shortly after they enter the lung tissue the cartilage is in the form of irregularly shaped plates which take the place of the rings in the tube external to the lung - These plates are situated especially at the bronchial

divisions

bronchial divisions - It also have a layer of unstriked or smooth circular muscular fibres and in this layer we have the anatomical elements which is the seat of the disease now under consideration -

As the tubes decrease in size so does the number of the plates of cartilage decrease & at last the plates having entirely disappeared, the mucous and fibrous layer coalesce forming a single thin membrane -

Pathological characters"

Asthma is without doubt a nervous disease, due to some

derangement

derangement of the nervous system - certain stimuli capable of producing an attack of asthma doubtless exert their effect through the reflex function of the nervous system - My own opinion is that at certain periods regular or irregular as the case may be the nervous system being in a certain condition, or rather morbidly sensitive to impressions from stimuli of certain properties, an attack of Asthma is produced while the same stimuli applied at other times would have no appreciable effects -

Secondly We see that the causes of

of Asthma are those that effect 5
the nervous system for instance
what will produce asthma in
one person may produce some
other nervous disease in another.

Symptoms which are
associated with "asthmatics" headache, depression
excitement &c are just those that
that we appreciate with compar-
itively little difficulty in connec-
tion with diseases known to be
essentially nervous

Lastly and most conclusive-
ly - Post Mortem Examinations
make known the fact that Asthma
may exist for months and years
without any organic change

taking

taking place in the lungs or elsewhere —

Physical Signs

Are not very positive though. exploration of the chest is useful in enabling the practitioner to distinguish other troubles accompanying the Asthma - Percussion gives exagerated resonance - By Auscultation we get dry rales during expiration - and loud diversified sounds all over the chest - Moist rales often appearing at the close of the attack about the time expectoration is apt to occur - As a general rule the lung is increased in size by an

an abnormal accumulation of air within the cells that is; a temporary emphysematous condition exists —

Having described the disease thus far I shall now proceed to give a history of the case which came under my observation, having omitted the Causes Symptoms & Treatment above I shall bring them in hereafter —

On 1859 the subject whose case I am about to describe was afflicted with an unusually severe attack of Spasmodic croup a disease which she had then been subject to for several years the attack

in

in this case was brought on by the exposure incident to a skating expedition -

This attack subsided in two or three nights leaving the patient with a very bad cold which kept him in the house for six weeks during which confinment he suffered (at stated periods it seemed) from shortness of breath generally coming on about ten o'clock at night and lasting one two or three hours, these revealed attacks of Asthma for they certainly were Asthma in its infancy always kept the patient awake so long as they lasted and obligid him to sit up in

in bed, respiration being much less painful than when in the recumbent position - These attacks always lasting three consecutive nights then there would be an intermission of two three or four nights and then again we would have an attack - Always on the mornings following these attacks the patient would complain of fullness in the head and general indisposition, these after symptoms at the present stage of the disease were as much to be dreaded as the disease itself -

The patient was now quite free from any trouble until the following October when the patient suffered from

from a regular attack of Asthma.
One of the most unaccountable symptoms in this attack was an irresistable desire to cough and all the movements of a "forcible expiration" being gone through with scarcely any sound would be produced. This attack lasted for three nights followed by the headache &c &c

During the intervals between the attacks the patient Enjoying perfectly good health -

The attacks now continued to occur at shorter or longer intervals up to 1866 each attack as a general rule being a little more severe & lasting a little longer than its predecessor, the

attacks

attacks varying in length from 11.
the first one to the last from three
days to six weeks

The disease now seemed
to become periodical recurring in
the months of Oct & Nov not during
the remaining months of the year, the
last attack commenced on the 4th
day of October 1865 and lasted six
weeks, the patient entirely escaping
in the fall of 1940.

From the first attack up
to the year 1866 the effects produced
on the whole system and appearing
after the attack of asthma broke
had subsided, were harder to bear
than the dyspnoea but not so alar-

1866

1866 -

Causation

"The occurrence of asthma involves a peculiar susceptibility in the bronchial muscular fibres to take on Spasmodic action, which does not exist in all persons" and in the case under observation the last statment is most certainly true as the causes are so numerous that the exceptions are not "agents capable of bringing on an attack but visa versa -

Among the most prominent causes are the following

Weather the slightest exertion on a bright and clear day will bring on

or an attack of very much embarrassed respiration & sometimes true asthma, while on a damp cloudy day our patient is as free to move as he likes as any one else

Season as stated above the fall of the year is the hard time on the asthmatic: just that period when the summer emerges into fall is the most trying, one year this time comes a little earlier & one year a little later

Location high and airy positions are much more favorable to the production of an attack than low marshy neighbourhoods, dry suits patient better than the country - Professor

D. L. Babel of the University of Va advised patient always to sleep on the ground floor when posible as there was generally a little moisture present –

Muscular Exertion is a prompt promotor of the spasmodic contraction of the bronchial tubes more particularly so in the fall than at any other time of the year

Sweet meats seemingly have a very decided power of bringing on an attack of the disease, also Champagne if taken in any quantity

Position modifies to a great extent the liability of the occurrence of an attack, the Erect position being the only

only one in which the patient can endure -

Mental Emotion - Fright and in fact many more causes may bring on an attack of Asthma more or less severe

Premonitory Symptoms

The patient a few hours before night experiences a heaviness in his head but not exactly a headache next he enjoys very much the feeling produced by a man sitting on your chest and also feels as though his ribs were hooked up to his shoulders

Symptoms during the attack

The first idea that the patient has after the attack comes on is that the

air

air taken into the lungs does not all come out again and consequently there is so to speak a banking up of air in the chest producing a most extremely disagreeable sensation, as the attack progresses the head is thrown back - chest expanded to its full capacity alae nasi raised mouth partially opened, eyes widely opened - veins in the neck swollen patient moves with great caution so as to avoid any unnecessary exertion still owing to his great nervousness he is continually changing his position - Experiences severe itching sensation on back & chest - great giddiness on attempting to walk - During the attack

Every

Every now and then the patient is able to take one full and deep inspiration and expiration only one yet this seems to throw the progress of the attack back for one or two seconds and also seems to act as the safety valve to prevent suffocation -

Heart action is increased and the pulsations of the artery at the wrist can be more readily felt than between the attacks -

Pulse quick and hard, whole muscular system seems to be on the stretch Hands and generally chilly also feet - Frequent desires to Empty the bladder but very little water passed at each attempt -

Treatment

The treatment of Asthma consists first in relieving the paroxysm and secondly treating in the intervals -

During the paroxysm the objects of treatment are to alleviate the pain and bring the paroxysm to an end as soon as possible and the means which have been resorted to, to accomplish these ends in our case have been in the first place, Friction produced by a hair glove applied to back and chest quite beneficial for some time - Stramonium smoked in a pipe may have been beneficial to a

Its a slight exciter at first but its good effects soon wore off and the after effects were of such a very disagreeable character as to make its objectionable - headache, nausea and loss of apetite always following its administration -

Strong Turkish Tobacco smoked in a pipe was employed with excellent results until it began to lose its emetic properties - Various Emetics were employed but with little or no success -

Marsdens Pectoral Balm though a quack medicine was tried and proved very beneficial for a short time in alleviating the paroxysm

not in

not in the least however tending
to break the attack

Bromide of Potash was used
quite exclusively during the fall
of 1868 but with little or no good effect

Fluid Extract of Sumbul the only
remedy ever employed that gave
prompt and perfect relief was used
during the last attack which con-
tinued for six weeks a paroxysm
taking place at some part of every
twenty four hours during the
period the attack lasted and each
paroxysm lasting from fifteen
minutes to two or three hours,
This remedy did not break the
attack but merely relieved the
paroxysm

paroxysm, only about ten or fifteen minutes being required after the administration of a dose to bring about almost natural respiration ℞ Fld Ext Lumbul ℥i
Aquae ℥i

S As soon as paroxysm comes on take a dose and repeat in fifteen or twenty minutes provided the first dose dont act - first dose generally produced the desired effect and this remedy was followed by no ill effects whatever as headache, nausea &c but gave relief never before gotten

Whiskey & Brandy have been tried on several occasions

but

but to produce a good effect on the disease so large a quantity has to be taken that were these remedies often employed the patients general health might suffer

Treatment in the Interval consists in removing as far as possible the exciting cause and the prevention of the paroxysm - Hoping that this dissertation on Asthma may meet with the approbation of the Faculty of the University of Maryland

I remain
Very Respectfully
Wm W Morris

F. T. Miles, M.D.

The

Inaugural Dissertation

On the

Circulation of the Blood

Submitted to the Examination

of the

Faculty of Physic

of the

University of Maryland

by

William H. Page

of

Hartwell Georgia.

Session of 1870 & 1871

To the Faculty

Respected Sirs;

I hope gentlemen you will not expect any thing from me besides that which I have learned from your own teachings and further more I hope you will not expect any thing contrary to the opinions adopted or reverse, to the many great truths taught by yourselves. Should I attempt to advance a new idea, or any thing out side of the beaten paths of the Regularist, the same may be entirely new to me, but the same may have been years ago advanced and advocated by a Cullen a Bell

a Hunter a Cooper or some other English, French or, German author whose, once renown works are remembered only as a past time and amusement to thoes who have leisure to read them, and of whom and which I have no knowledge and through fear, that I may be accused of plagarism will only attempt to tell you of some things which I have learned and retained from your lectures, the teaching of which has been so explicit and the expression of which there can be no plagarism, viz

Circulation

by circulation is mean that vital, that life giving fluid which courses the arteries, and that some what adulterated fluid which flows through the veins to be renewed by the lungs, the composition and component parts of this fluid — called blood is hard to the students of physiology — the living circulatory apparatus exhibits two hearts beating side by side, throbbing actively at the rate of 75 to 80 per minute. The pulmonary artery pulsates with its contents, which are driven to the vitalizing air of the pulmonary air cells, the systemic

heart receives the oxygenated blood from the lungs, and pours it out in life giving streams through the systemic arteries, to fertilize all parts of the republic, of which the heart is the mercantile capital, The billions of capillaries, in all parts of the body are seen to be flushed with the nutritious currents which come gushing into the more active organs, while the blood, with intermitting flow, spreads more slowly through parts which less needs its components, but quietly or slowly onward it is driven here bearing elements which are

required for nourishment, and
there receiving those which have
bred acted and died; all the
while its own Character is thus
changed, and also by the
decompounding and recompounding
of its own components with
each other as it moves along;
as the swift river takes its
rise from the brooks, the rills
the springs, and the wandering
water drops, so are the systemic
veins seen to gather the blood
unfit at present for further
use, for it is from the almost
invisible Capillaries in all parts
of the body, and at last by the

superior and inferior vena cava pour a swift current into the pulmonary heart which expanding to receive it contracts to cause it again to be spread out to the air in the capillaries of the lungs, in the mean time the lymph and chyle are drawn into the circulation and swallowed up by the blood of which they become apart, thus round and round circulates the blood, that from one part being mingled with that from another some of its components fall into the current poured upward to the

when accumulated, poisonous sub=
stances is removed from it, while
in several other parts, or [illegible]
organs for purifying the blood,
whenever a muscle is contracted
an impulse is given to the whole
circulation to [illegible]
part is rubbed; cold applied
continuously, checks the circulation
in the part affected, and causes
an injurious circulation or
congestion of blood in other parts;
thus a cold skin is attended with
sanguinous accumulation in the
internal organs, all improper
mental actions manifests itself
at once in the circulation [illegible]

irregularities of the circulation
injuriously affect the mind, any
compression checks the circulation,
and reduces the temperature of
the body, on the other hand
wholesome food in proper quantity
and digestion and a proper supply
of pure water, pure cool air in
suitable quantity, healthful
exercise, bathing &c give a healthful
and lively circulation to every
part; which exhibits corresponding efficiency in all its
functions

William H Page

AN

Inaugural Dissertation

ON

Six Cases of Disease

Submitted to the Examination

OF THE

Provost, Regents and Faculty

OF

PHYSIC,

OF THE

UNIVERSITY OF MARYLAND,

FOR THE DEGREE OF

DOCTOR OF MEDICINE,

By

John Gouldsmith Jay

Of

Harford County, Maryland

Session of 1870 1871.

A

Clinical Report of Cases

Submitted to the Examiners

of the

Provost, Regents

and

Faculty of Physic

of the

University of Maryland

for the

Degree of Doctor of Medicine

by John Goldsmith Jay

Case 1st

1

Extraordinary Case of Enlarged Spleen.

The following remarkable case of enlargement of the spleen was admitted into the University Hospital, and attracted the attention of those who are connected with that institution. As such cases are comparatively rarely met with, even by those who have the most extended opportunities for observation, an account of the same may be of interest.

The patient, a negro man aged twenty-eight years, by occupation a sailor, came into the house

on the 28th day of April 1870.

From his account he was brought up in a malarious district, and had been employed for a number of years on some of the bay and river craft of the lower counties of the State of Maryland.

During this period he had been very frequently the subject of intermittent fevers. According to his statement uneasy sensations referable to the spleen were first experienced about eighteen months previous to the date of his admission, and gradually increased in severity.

When he first came under my

observation his condition was as follows: The abdomen was enormously distended by viscera and some accumulated fluid, dependent upon mechanical causes.

The lower extremities were very œdematous, pitting deeply upon pressure, with the integument made tense from excessive dropsical effusion. When the case was admitted it was supposed to be one of Bright's disease of the kidney; but upon further examination, the diagnosis of splenohæmia was clearly established.

There was no puffiness of the eyelids nor swelling of the face

and upper extremities; the countenance was not such as would warrant a belief in renal disease, and finally the absence of albumen in the urine seemed sufficient to exclude Bright's disease. On the other hand, the induration and tumefaction in the left hypochondriac region were plainly perceptible to palpation. With the assistance of percussion and manipulation through the thin and feeble abdominal walls, the outline of the enlarged spleen, with its peculiar fissures, could be distinctly defined. There had been epistaxis and passage of blood

from the courts.

The case being diagnosed as one of enlarged spleen with the usual accompanying phenomena, the patient was put upon chalybeate tonics with quinine, which failed however to give any good results, or to diminish in any way the enlarged organ.

A successful case of extirpation of the spleen, occurring in the practice of a German surgeon, having been reported in the English journals about the time of the admission of this patient into the hospital, the removal of the organ was suggested by Prof. Christian

for the case in question, as it was evident that internal medication would be of no avail. An opportunity, however, was not afforded to test the value of this operative expedient, as the death of the patient was induced through an accident which occurred to him one week after he came into the wards. In moving along one of the hospital passages he fell down a short flight of steps, and in his disordered condition was so seriously injured that he died within twenty-four hours.

After death an autopsy revealed the following conditions:

On opening the body 7½ pounds of dark blood could be drawn off by paracentesis. The abdomen was then opened by a crucial incision; the flaps being turned aside, the abdominal viscera were exposed in the following order; The left lobe of the liver extended about 3½ inches to the left of the median line, and overlapped the spleen to the extent of 4 inches. Its right lobe extended below the margin of the ribs 3½ inches. The weight of the liver was 7¾ pounds — the average weight of the healthy liver being from 3 to 5 pounds. The stomach was small and

pushed over to the right side by the enlarged spleen. The omentum was much inflamed. The spleen extended from the pushed up diaphragm, downward throughout the whole of the left side of the abdomen, reaching nearly to the pubes, also encroached on the right side for about 2½ inches beyond the median line. It was lobulated upon the right margin, the fissures being four in number, and from one to two inches in depth. The organ was adherent to the diaphragm.

There were also attachments between other parts of the abdominal viscera.

The weight of the spleen was 9¾ pounds; length 16 inches; greatest breadth 11½ inches. In contrast, the normal weight is six or seven ounces.

The heart was also somewhat hypertrophied and forced upward and out of position by the enlarged abdominal organs.

The kidneys presented a normal appearance.

Although the size of this spleen was so great, even larger ones have been mentioned by writers on pathological anatomy.

Several casts were made of this singular abnormity and placed in the University Museum.

Alex. Sheldon, Negro, 6 yrs 27 yrs

Admitted May 23rd 1870.

This man was taken sick two days previous to admission while employed as a sailor upon a vessel plying between Baltimore and Richmond. When first seen he had considerable fever and great restlessness with incoherence of replies when questioned; if however he was sufficiently aroused he complained of pain in the occiput and down the spinal column. The pulse was 130 to the minute; the tongue somewhat coated and of a whitish color; the bowels costive and

the skin dry, also much cooler than natural, being quite in contrast with the rapid pulse.

There were spasmodic twitchings of the muscles of various parts of the body, particularly of the extremities and face, with a wandering semi-delirious state of the mind.

The patient seemed also quite deaf, and the eyes rolled from side to side without appearing any thing.

This combination of symptoms seemed to name the affection under which the patient was labouring, (cerebro-spinal affection) accordingly he was

put upon the following.

℞. Kinnia sulph. grs xij.
Acid Sulph. Aromat. ℥ s.
Spts. Æthereis Nit. ʒ ij
Morphiæ sulph. grs s
Aqua dist. ℥ xiv.
S. One half at once, the other four hours afterwards.

Aug 24th. Very restless last night having slept but little. He is in a condition of muttering delirium this morning, with continual twitching of the muscles and slight convulsive movements of the fingers. Received the medicine as directed. Pulse 118. Respiration 30. Temperature about 98.

May 25th. The condition of the patient nearly the same as yesterday. There has been no disposition to take nourishment since he came into the house, and it is with difficulty that he can be made to take any thing whatever. Pulse 108. Respiration 32. Temperature 1.1½.

The prescription of the 25th inst. was renewed and a half ounce given every four hours. Brandy and whiskey were also administered as often as the patient could be induced to receive them.

May 26th. Suddenly in the night the patient was taken with violent action of the bowels, very

fluid in consistence and passing involuntarily. This and other symptoms caused the case to assume more of a typhoid form, the treatment however remained materially the same with the addition of the following.

℞. Potas. cit. ℥ij.
Spiritus Mindereri ℥ij.
S. one halfounce every three hours.

May 27th No improvement.
Pulse 140. Respiration 42. Temperature 103. Treatment continued.

May 28th Patient remains in about the same condition.
Pulse 130. Respiration 36. Temperature 101.
Ordered stimulants, beef essence, milk &c.
And in addition the following

℞. Spt. Terebinth ℥ij.
Gum Acaciæ }
Sac. alb. } aa ℥iß.
Tinct Opii. gtt xxx.
Aqua menth ℥iij.
S. Tablespoonful every three hours.

May 30th. The patient received the medicine ordered yesterday with regularity. For two days past the disease has assumed more and more the typhoid form: the stools are greenish yellow in appearance of a very offensive odor and passing involuntarily. During the whole of the past night the patient was in a delirium, half comatose but wakeful condition. This morning, milk

and whiskey are given every fifteen or twenty minutes. The pulse is about the same as yesterday, 130 beats to the minute. Respiration 42. Temperature 105½.

The patient continued to grow worse during the whole morning and died about 11 Oclock A. M.

This was a most violent attack, running a short course to a fatal termination and occurring in an apparently healthy man; supposed in the onset of the disease to be Cerebro-Spinal Meningitis, but a new set of symtoms appearing, the diagnosis of Typhoid from was made.

At the autopsy no lesions of any importance were discoverable

The Lymph glands were somewhat
inflamed, but in a very slight
degree and not at all suppurated.
Probably owing to the brief duration
of the disease.

Case 3rd

Stanley Byrne aged 27 years was admitted May 26th 1870 for a scrofulous enlargement of the cervical glands which had existed for about two months previous to the time when he came under observation, and was gradually increasing in size, being considerably indurated.

For this he received such treatment both constitutional and local as is usually prescribed in cases of a similar nature—namely Iron, Cod liver oil, Iodine, Iodide of Potash &c internally, with the external application of a solution of Iodine and Potas Iod, in Glycerine.

He remained upon this treatment

for about a month, by which the glands were becoming very much reduced in size and the general health of the patient appeared greatly improved. His condition was so much bettered that the time was near, at which he intended to leave the house, when suddenly on Sunday, June 26th he was attacked with erysipelas in the head of a very severe form. This extended quite rapidly and daily increased in violence until the eyes were completely closed, the lid of the right eye being excessively swollen and œdematous. Finally his head and face became so greatly swollen

as to render him almost unrecognizable even to his friends.

The inflamation extended in a short time to the neck and upper portion of the chest, the greater portion of the inflamed surface being covered with watery blisters; these were particularly large and abundant upon the face and forehead.

The nature of the affection being at once evident, he was put upon Quinine in four grain doses every three hours, and Zinc, Ferri Chlor. Zjs. given at the same time, in which with the addition of water the Quinine was dissolved.

June 29th. Pulse 114. Skin hot and dry except where the vesicles have burst and the contents allowed to flow over the surface. Patient very restless.

June 30th Pulse 114. Temperature 101. Respiration 28. The face is swollen more than yesterday. The erysipelatous inflamation has also extended farther down upon the chest. The right side is much more inflamed than the left. The dose of Lime Fruit increased to one drachm every three hours. In the intervals he takes milk and humewater. The stomach is very irritable.

July 1st Ten Oclock A.M. Pulse 116

Was extremely restless last night. The skin is very hot and the redness has extended upon the scalp as also farther down on the body. In the progress of the inflamation blisters of water appear at the expiration of twenty four hours from the incipiency of redness, which by the second day break, leaving a dry granular matter upon their former site. A great portion of this remains adherent to the epithelium until the latter disquamates. Yesterday afternoon the hair was cut from the head which was then enveloped in cotton and rye flour.

July 2nd. Pulse 119. Temperature 103½.
No retrogression of swelling or other favorable symtoms.

July 3rd. Pulse 116 and very feeble. Temperature 105. The patient had a very restless night, the face is of a livid, almost purple hue and about over it are patches of dry matter before alluded to. Occasionally he takes small quantities of beef tea. Receives his medicine at proper intervals.

July 4th. Pulse 118. Respiration 32. Temperature 104½. No improvement perceptible. Condition very critical.

July 5th. Yesterday morning the patient was removed from the public

ward to a private room remote from his former bed; whereupon improvement almost immediately commenced.

By the afternoon, in these more favorable circumstances and surroundings the pulse had diminished in frequency fifteen beats, and was also stronger.

He now spoke in a rational way, having been for the previous twenty-four hours more or less delirious.

This morning his pulse is 90, having diminished twenty-eight beats since the same time yesterday.

Medication the same as heretofore.

July 6th. Pulse 80. Very great change for the better. The eyes are much less swolen, being able to open the left one.

The epithelium and sended matter falls off in large scales, in some places leaving shallow ulcers. The skin is moist and of normal temperature; the tongue much coated, white and foul, but as he has been unable to protrude it before this morning, no comparison can be made with its former condition.

July 7th Pulse 81. Improvement continues; the tongue still much coated but cleaner than yesterday.

Has some appetite, taking beef tea and milk. Iron and quinine continued

July 8th Pulse 76. Condition of the patient daily becoming better. The skin is this morning quite

moist with perspiration.
July 9th. Pulse 78. No material change to report. Desquamation continues.
July 10th. Much the same as yesterday. Pulse 84. Appetite not the best, but general appearance improving. The enlarged cervical glands for which he came into the house have become reduced in size to a remarkable degree since the commencement of the erysipelatous action, those of the left side being reduced to their normal size.
Jan 11th. Complains of pain in the head and stomach, on which account the Iron has been suspended.
Jan 15th. Since the last report, the

patient has continued steadily to gain and although in a very weak condition as might naturally be supposed, he is again up and moving around the room. The Vinct. Ferri was this morning ordered to be renewed, and in addition Codlin oil three times daily.

This patient was discharged as cured of Erysipelas July 24th.

There were two points of great interest in this case, The first was the marked and immediate improvement upon his removal from the impure and vitiated air of the public ward, to the more quiet surroundings and pure atmosphere of a private room, and the other

the great reduction of size in the scrofulous glands during the atack of the erysipelas. The latter was a most remarkable phenomena which I am unable to explain otherwise than that the secondary affection acting as a violent counterinitant was in some way instrumental in effecting a reduction of these glandular indurations. It was hoped that a permanent cure had been brought about, and possibly that a means had been discovered for the cure of such cases; It is but fair however to state that after a time the glands began again to enlarge but had not when last seen attained their former size.

Mathew Mortenson Aged 27 yrs.

Admitted Aug 7th 1870.

This patient, a Norwegian, fell from the third story window to the pavement beneath, a distance of fifty-five feet, and sustained severe injuries upon various parts of the body.

There was fracture of the outer table of the frontal bone, and a large contused, and ragged wound of the soft parts covering. There were also fractures of the bones of the forearm, and some internal injury as was evinced by hæmaturia. When he was brought to the house the left eye was very much swollen and completely closed; the wound in the scalp was

about 2½ inches in length, and gaped exceedingly; the fracture of the bone below could be easily detected by a probe. In consideration of the great contusion of the parts and the probability of suppuration, there were no sutures used to draw the lips of the wound together, but it was merely dressed with Carbolic acid gr. ℥vj. to water ℥j.

There was much swelling and deformity of the wrist and lower portion of the forearm, rendering fracture probable, but for the reason given the true condition could not be accurately ascertained. The radius was afterwards found to be fractured

about an inch from its carpal extremity, constituting what is known as Bartons fracture. This was properly adjusted and the arm put in a splint.

On the fourth day after the injury it was noticed that there was internal strabismus of the left eye, this being dependent upon paralysis of the Rectus externus, due to injury of the sixth nerve by which this muscle is supplied.

On Thursday, Sept. 8th it was also noticed by Prof. Chisolm that the left side of the face was somewhat paralized, but in so slight a degree as to escape the notice of any but the closest observer.

This paralysis of the face was caused by the implication of the Facial or 7th nerve of this side. On the following day the paralysis was much more perceptible, this side of the face had a fallen appearance with puffing of the lips when the patient spoke.

On the 10th of September it was obvious that the paralysis was of much greater extent than on the previous day, and this continued to increase until there was an evident cholera over the muscles of the left side of the face. In consequence thus, when the mouth was widely opened the right side was drawn more

farther down than was the pit.

At this time the swelling of the arm had in a great measure subsided, it was accordingly put in paste and splints with slight bandage.

There was but moderate suppuration of the wound in the scalp, and the tissue filling up by granulations, the part healed without deviation from the natural process of cicatrization. As the adhesion of the muscles of the face was gradual in its course and commenced several days after the occurrence of the accident, it was feared that the paralysis would extend also to the upper extremity, which in

this case would have been of the right side, as the nerve fibres which supply these parts have their origin in the left side of the brain, and take this arrangement on account of the decussation in the anterior pyramids of the Medulla Oblongata. By this decussation is explained the fact that injury to one side of the brain, will produce paralysis of the motor nerves of the opposite extremities.

With these considerations in mind, the patient was closely observed each day to see whether impairment of motion of the right side would occur, and trial was made at each visit of his power of prehension

of the right hand, but as no comparison could be made with the left owing to injury of the latter, this test was rather unsatisfactory; it was however the best that could be devised.

The paralysis having proceeded as far as stated, fortunately showed no disposition to extend farther, but remained the same for about two weeks, when motion and the proper axis of the eye began gradually to be restored; not enough to be noticed from day to day, but marking the position of the pupil, and the mobility of the face, and making a comparison with their condition several days subsequently, the improve

ment was very obvious.

In about three weeks, cicatrization of the wound in the scalp had taken place, and two weeks later the splints were removed from the arm.

The patient remained in the hospital about six weeks longer, and was then discharged.

At this time the eye had resumed nearly its natural position and appearance, and the muscles of the face their tone and normal action.

No internal medication was used during the progress of this case, time being adequate to effect a cure.

Case 5th

Captain Freeman, aged about fifty years, was admitted Nov. 9th for severe injury of the face, sustained while on board of his vessel State of Virginia.

At the time of the accident he was standing upon the upper deck, and leaning over the opening through which the walking beam plays was giving some orders to the fireman below. While in this position, the machinery which had been at rest was suddenly put in motion, some portion of which rose with great violence and struck the captain in the face, causing a ghastly wound. The whole face seemed to be crushed, and a deep,

long incision with ragged edges was made from the outer angle of the right eye across the superciliary ridge and nasal [illegible] of the frontal bone to the middle of the eyebrow on the opposite side. This formed a flap about one inch and three quarters in width, which with the eyeball hung down upon the cheek.

The wound bled profusely for a time, his garments being saturated about the shoulders; and the beard, as well as the hair of the scalp being one mass of coagulated blood. In this condition he was brought to the hospital. Upon examination it was found

that the facial bones were nearly all to some extent crushed and displaced, giving to the injury a compound fracture of a very severe nature.

Both the Maxillary, Palate Lachrymal, and Nasal bones were more or less crushed, and on the right side which received the greatest force of the blow, there were fractures of the Malar bone, great ring of the Sphenoid and zygomatic process of the Temporal, also the supra orbital portion and external angle of the Frontal bone.

The crushing and disorganization of the bones was so great that it afforded no support whatever to the

superincumbent soft parts, which rose and fell with each act of respiration.

On account of the obliteration of the nasal passages, breathing had to be carried on through the mouth. The pharyngeal and palate muscles were also injured to such an extent as to render deglutition extremely difficult.

One remarkable feature of the injury was the manner in which the Superior Maxillary bone was fractured. The upper portion of the right bone was completely crushed, the left but slightly so; the alveolar border however was taken off as by a chisel throughout its whole extent,

the two lateral portions not even being separated at their symphesis or median line. These parts with the horizontal plates of the Palate bones fell upon the tongue impeding respiration by means of the mouth.

Prof Johnston was called to see the case and by a very ingenious apparatus of his own device succeeded in bringing the fallen parts to their proper position and relation to surrounding structures, and by the adjustment of the bones causing reunion the more readily to take place. The apparatus was as follows, A piece of silver wire such as is ordinarily used for sutures was doubled and threaded in

a needle with an eye near the point. The needle was introduced into the mouth and passed through the cheek just below the prominence of the Malar bone. This was done on both sides, the wire passing under the upper teeth, and by means of a piece of tape to the end of the wire, carried over the head and tied, the fractured bone was securely held in place.

Upon the arrival of Dr Johnston the open wound was brought together by eight or ten points of suture, and these allowed to remain until the parts were united.

The day after the injury

the patient suffered very considerably especially as the day advanced, the pulse was however but very little accelerated. Two days after the accident his bowels became exceedingly loose, which condition was checked by appropriate measures. He took nourishment in a liquid form by means of a small cup with a mouthpiece, which is used for cases in which the patient cannot be otherwise conveniently fed.

Four days after he was hurt he began again to breath through the nostril of the left side, and shortly after through the other also.

Prior to this opening of the air passages

there was considerable suppuration and discharge of the deeper contused tissues which sought this means of exit.

On the 15th some very unfavorable symptoms presented themselves, the patient became very restless and irritable and that night he was quite delirious. These cerebral symptoms abated in a measure the next day, but returned again in the evening. It was feared that the brain would become involved in the inflammation with serious or fatal consequences, but all these inauspicious indications gradually subsided and he again began to improve.

On the 21st, the [illegible] for the

support of the superior alveolar process was removed by Prof Johnston, the parts having become sufficiently consolidated to remain in their proper position. As a result of the injury some deformity remained; the right superciliary arch being crushed left an irregular depression in its place.

The middle portion of the face remained considerably flattened, and the voice was materially changed, ever afterwards having a nasal tone.

The right eye was subsequently removed by Prof Johnston to avoid the sympathetic irritation which would almost inevitably have been produced in the sound one had this cause of offense been allowed to remain. The result of the treatment of the case was all that could be desired.

Case 6th

Rebecca Collins. Aged 20 yrs.

The case under consideration came into the hospital with a vesicular vaginal fistula of about an inch and a half in length, consequent upon contusion or rupture of the parts in effecting an abortion. As it was difficult to elicit much information from the patient, a knowledge of the length of time she had been pregnant could not well be ascertained.

According to her account a dribbling of urine commenced shortly after the removal of the products of conception by one who follows this nefarious occupation. This was about a year ago.

The woman came into the house

for the purpose of having an operation done for the relief of this distressingly annoying and uncomfortable condition. This was successfully performed by our distinguished gynecologist, Prof. W. T. Howard.

The operation which was done on the 24th of November was preceded by the suitable preparation of the patient. On the previous evening a dose of castor oil was given to completely evacuate the bowels, and thus unless the accumulated fæces which by their presence would distend the rectum by which the operator would be much incommoded; and furthermore to prepare for the long continued non action

of the bowels which was to be induced and which by ensuring a suspension of all motion of the parts is so essential to the success of the operation.

On the morning of the operation she was allowed but very little food for fear that vomiting might be induced by the influence of the anaesthetic, which would disturb and probably tear out the sutures.

The woman was placed upon the table in Sims' position and anaesthetized with Chloroform, which was with considerable difficulty effected, as she seemed to be not very susceptible to the influence of the agent.

The patient remained very rigid almost throughout the entire operation, and was quite restless when the chloroform was for the shortest time withdrawn.

The tongue seemed to have a considerable tendency to fall backwards and cover the glottis, thus obstructing the respiration, on account of which it was drawn out of the mouth and retained by a tenaculum.

As soon as the patient became quiet Sim's speculum was introduced into the vagina and by the additional means of a couple of retractors the labia were drawn aside, thus giving a very excellent view of the fistulous opening.

The callous edges of the patula being raised by a tenaculum, were then pared off by means of a curved scissors. After the stoppage of hemorrhage the parts were brought together by means of six points of silver suture which retained the edges in perfect apposition.

The sutures were made by first threading curved needles with a piece of silk to the end of which was attached the silver wire. The needle being held by a forceps expressly for the purpose was passed through the opposing lips; the thread and wire following in succession, and by tension of the ends

of the wire, each suture was completed.
A catheter was now introduced into the urethra and the patient put in bed. This operation was attended with considerable difficulty from various causes, one of which was the forcing of the bladder through the fistulous opening by the violent muscular contraction of the patient.
The time occupied in the operation was about 2½ hours.
At Six o'Clock on the same evening the patient was doing well but had not entirely recovered from the prolonged anaesthesia to which she had been subjected. The pulse was 78 to the minute with normal respi

ration. An India rubber tube was attached to the end of the catheter and passed out of the bed, that the urine might pass out into a vessel and avoid soiling the clothing.

Next morning the patient was quiet and appeared to be suffering but little. There was some difficulty in speaking from the swollen condition of the tongue produced by puncture of the tumor when this however bring of no material consequence. The pulse was somewhat accelerated and she refused to take any nourishment, probably for the reason that the stomach was some-

what irritated. She received Opii gr. j.
last night and another this morning.
O'Clock P. M. About the same, pulse
rather more frequent than in the morning.
Nov 26th Pulse good. Complains
of much soreness of parts. Rested
badly last night. Takes but little
nourishment. The parts receive strict
attention, being cleansed twice daily.
Nov 27th Much as yesterday,
treatment same as heretofore.
She receives Opii gr. j. night and morning.
Nov 28th Patient somewhat
restless but doing well. Receives very
proper attention.
From this time forward the
patient continued to improve without

without anything unusual to note.

The parts being sufficiently united the sutures were removed Dec 4th. The administration of Opium was now stopped and the following day she was given a dose of Castor oil by which several easy evacuations were obtained.

There was no mine whatever passed by the former fistulous passage after the removal of the sutures; the operation proving an entire success, being one among the many good results obtained by Prof Howard in operations of a similar nature.

In conclusion I offer my thanks to the members of the Faculty of the University of Maryland both individually and as a body, for their deep interest and zeal in the impartment of the sound doctrines and erudite principles which they have with such ability and faithfulness endeavored to instil into the minds of those who have confided in them for the elucidation of the deep and intricate lore of the healing art.

Not only do I thank them as a member of the Medical class, but also for the kindness

shown to me by them all while a student in the University Hospital; and my gratitude can find no other expression of its fullness than the sincere hope that they may long continue in their present spheres, as brilliant luminaries to uphold the honor and dignity of the noble Institution which is proud to present them as sustainers of her present preeminent position as a medical school, and which their endeavors and untiring devotion have so materially conduced to effect.

John Gouldsmith Jay

Feb. 1st 1871.

AN

Inaugural Dissertation

ON

Hydrocele

Submitted to the Examination

OF THE

Provost, Regents and Faculty

OF

PHYSIC,

OF THE

UNIVERSITY OF MARYLAND,

FOR THE DEGREE OF

DOCTOR OF MEDICINE,

By

Geo. Wm. Pope.

Of

Baltimore Md.

Session of 1870—71

Hydrocele.

A desease of the tunica vaginalis consisting in a preternatural accumulation of the fluid which naturally moistens the internal surface of the membrane.

Anatomy. The tunica vaginalis is the serous covering of the testis. It is a pouch of serous membrane, derived from the peritoneum during the descent of the testis in the foetus from the abdomen into the scrotum. After its descent, that portion of the pouch which extends from the internal ring to near the upper part of the gland becomes obliterated, the lower portion

remaing as a shut sac, which invests the outer surface of the testis, and is reflected on the internal surface of the scrotum; hence it may be described as consisting of a visceral and parietal portion. The visceral portion covers the outer surface of the testis, as well as the epididymis, connecting the latter to the testis by means of a distinct fold. From the posterior border of the gland it is reflected on to the internal surface of the scrotum. The parietal portion of the serous membrane is far more extensive than the visceral portion, extending upwards for

some distance in front, and on the inner side of the cord, and reaching below the testis. The inner surface of the tunica vaginalis is free smooth, and covered by a layer of squamous epithelium. The interval between the visceral and parietal layers of this membrane constitutes the cavity of the tunica vaginalis.

Hydrocele is a purely local affection, the result of some change in the membrane itself, whereby the proper balance between secretion and absorption is lost. This change depending upon an irritation a low degree of inflamma-

tion chronic in its nature, being often traceable to a blow or other injuries, it also frequently caused by exposure to cold, cold bathing &c
The desease is most frequently met with in individuals about the middle period of life, and generally in persons of feeble power or in those of a gouty or cachectic constitution.
The effusion in general consists of a watery, clear, transparent fluid of a light straw color, containing a larger proportion of the albuminous and saline constituents of the blood than are present in ordinary dropsical effusion,

when the disease however is one of long standing and where the swelling is very large we often find associated with this fluid some of the ordinary products of inflammation, such as flakes of lymph, disintegrated blood particles of cholesterine, epithelium &c in these cases the fluid assumes a dark brownish or chocolate hue. The quantity of the effusion varies between 4 ~~and~~ & 20 z sometimes however amounting to several pints.

The sac and the tissues external to it commonly undergo but little change beyond the distension

caused by the accumulation of the fluid, the walls remaining thin and transparent for a long period, sometimes however especially if there have been an injury a effusion of Blood into it from any cause, the tunica vaginalis becomes thick, opaque and dense even to cartilagenous consistense, and in some old cases calcareous deposits have been found upon its inner side.

Symptoms.

These are tolerably evident in hydrocele, beginning with a degree of swelling and weight about the testis, the swelling

may at first be soft, but after a while becomes hard and tense; or it may be so from the commencement. The tumor assumes an oval or pyriform shape, being narrowed above, rounded and broad below; it is smooth and uniformly tense and hard often having a semi-elastic feel. It reaches upwards along the cord towards the external abdominal ring, which however is never invaded by it unless we have hydrocele of the cord present, the cord is usually distinctly to be felt above the upper margin of the tumor.

In some cases where the walls yield unequally it causes the swelling to assume various forms, it may be more elongated or spherical than usual or circumscribed portions of the sac yielding in a greater degree than the rest may give rise to pouch-like dilatations forming biocular or multilocular hydrocele.

The testis in general occupies the posterior lower part of the sac being regulated in its position by the attachment of the tunica vaginalis, it is ~~frequently~~ frequently slightly tender owing to the pressure, and likewise

somewhat enlarged.

Diagnosis

Hydrocele appears on each of the two sides of the scrotum in about an equal number of cases. Its diagnosis in general is not attended with much difficulty, the position and shape of the swelling its termination below the external ring so that the end may be felt freely above it, its lightness & fluctuation, and above all its transparency, furnish such ready means of diagnosis in the great majority of cases that a mistake does not often occur. To ascertain whether

the swelling is transparent may be readily done by transmitting rays of sunlight or from a candle through the tumor whilst the eyes are screened in order not to receive any light but the rays passing through it. Though transparency is thus a most valuable positive indication yet the negative evidence afforded by its absence is by no means equally conclusive, that the swelling is not of the nature of Hydrocele, for as before stated we often find some of the products of inflammation present in the effused liquid, which

renders the swelling opaque, increased thickness of the walls of the sac present the same difficulty. In such cases our only means of making a correct diagnosis depends on making a puncture into the sac with a grooved needle or fine trocar, or what is still better to puncture it with a hypodermic syringe, which will become filled as the piston is raised if there be fluid present.

The tumors of the scrotum that are to be distinguished from hydrocele are Hernia, Varicocele - Haematocele and Sarcocele.

Hernia is distinguished from hydrocele by the swelling disappearing more or less completely by pressure and by the patient lying down; reappearing on the removal of the pressure or on his assuming the erect posture, the impulse the tumor communicates to the hand upon coughing and its flaxidity. Where the scrotal hernia is irreducible it may be recognized likewise by the impulse on coughing, by its occupation of the canal and by the testicle being distinctly perceptible below it, and in either case by not transmitting

light. It not unfrequently happens that hydrocele is complicated with hernia, in these cases the two sperate tumors can usually be distinguished, there being some degree of constriction or of consolidation between them. The hydrocele presents its ordinary character of translucency, ineducibility & circumscribed outline and is commonly placed anterior to it, The hernia on the other hand is ineducible. Congenital hydrocele which occurs in consequence of the tubular prolongation of the sac not being obliterated after the descent of the testicle, is distinguished from

congenital hernia by the former not being attended with gurgling sound upon its reduction, which may be accomplished by simply squeezing the tumor, the hernia requiring some degree of manipulation.

Varicocele is distinguished by its pyramidal shape and its knotted soft and irregular feel. Often being reduced when the patient lies down, it will when he appears stands up fill again even though the external ring is compressed by the fingers.

Haematocele by its sudden and rapid formation, by its occur-

ning subsequently to a blow strain or injury and not being translucent.

Sarcocele the tumor being heavier compared with it size than that of hydrocele, and is attended with severe pain, but it is best in doubtful cases to make use of the trocar.

Treatment

The treatment of hydrocele is divided into the palliative and curative.

Palliative treatment is instituted merely to relieve the patient of the annoyance induced by the bulk or weight of the tumor, consisting in the use of a suspen-

sory bandage and cooling lo-
tions, or in tapping with a fine
trochar, these means in some
very exceptional cases will even
effect a radical cure, in infants
more especially. Where the hydro-
cele is congenital a truss must be
applied over the external ring
to prevent its accumulation
from the abdomen.

The tapping of hydrocele although
simple enough, yet requires a
few precautionary measures
the principle of which are to
avoid puncturing the testicle or
one of the scrotal veins. The
tapping may be done by putting

the antenior part of the swelling on the stretch by grasping it behind with the left hand and then pushing the trocar into the lower part of its middle third in front, selecting a place where there are no large veins, carry the instrument at first directly backwards but as soon as it has perforated the sac, directing its point upwards to avoid the testicle. If the testicle be situated in front as it sometimes occurs the swelling must be tapped at the side or behind.

Repeated tapping in itself often brings about a radical

cure. The curative treatment has for its object the excitation of a sufficient degree of inflammation in the tunica vaginalis to restore the lost balance between secretion and absorbtion, with or without the obliteration of the sac. The means by which this inflammation is set up are either the introduction of a small seton into the tunica vaginalis or the injection of some irritating liquid as Iodine, Zinc solution, wine &c. This inflammation is always attended with a considerable amount of swelling of the testis, & sumum-

ding tissues, necessitating the confinement of the patient to his bed for a few days until the swelling has subsided. The old practice of laying open the sac and introducing a pledget of lint is at present seldom made use, as it not unfrequently is attended with bad consequences as sloughing of the scrotum. The treatment by injection of Iodine is that most commonly made use of, which consists in tapping the swelling as usual by a fine trocar and injecting through the canula

by means of a syringe from one to three drachms of pure tincture of Iodine, The swelling should then be well shaken in order to allow every portion of the sac to come in contact with the irritating fluid. The liquid may be allowed to remain in the sac if the patient does not complain of severe pain, or it may be allowed to escape after remaining for about five or ten minutes.

If the injection of Iodine fails to set up a sufficient degree of inflammation, we must resort

to a seton. This may be introduced by means of a naevus-needle, the fluid of the hydrocele being allowed to drain away through the punctures thus made, there are a great many points brought of late in favor of this plan of treatment as it does not confine the patient to his bed and the amount of inflammation can be better regulated.

Cases in which neither the Iodine nor the seton will establish a cure, the sac must be layed open, as it will be found in general to depend upon a

calcareous deposit on the inner surface of the membrane, these should be removed, a portion of the sac excised, and the wound kept open so as to cause suppuration. The inflammation which follows is sometimes very acute and accompanied by a good deal of constitutional disturbance.

Respectfully
Geo W. Pape.

AN

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[illegible]

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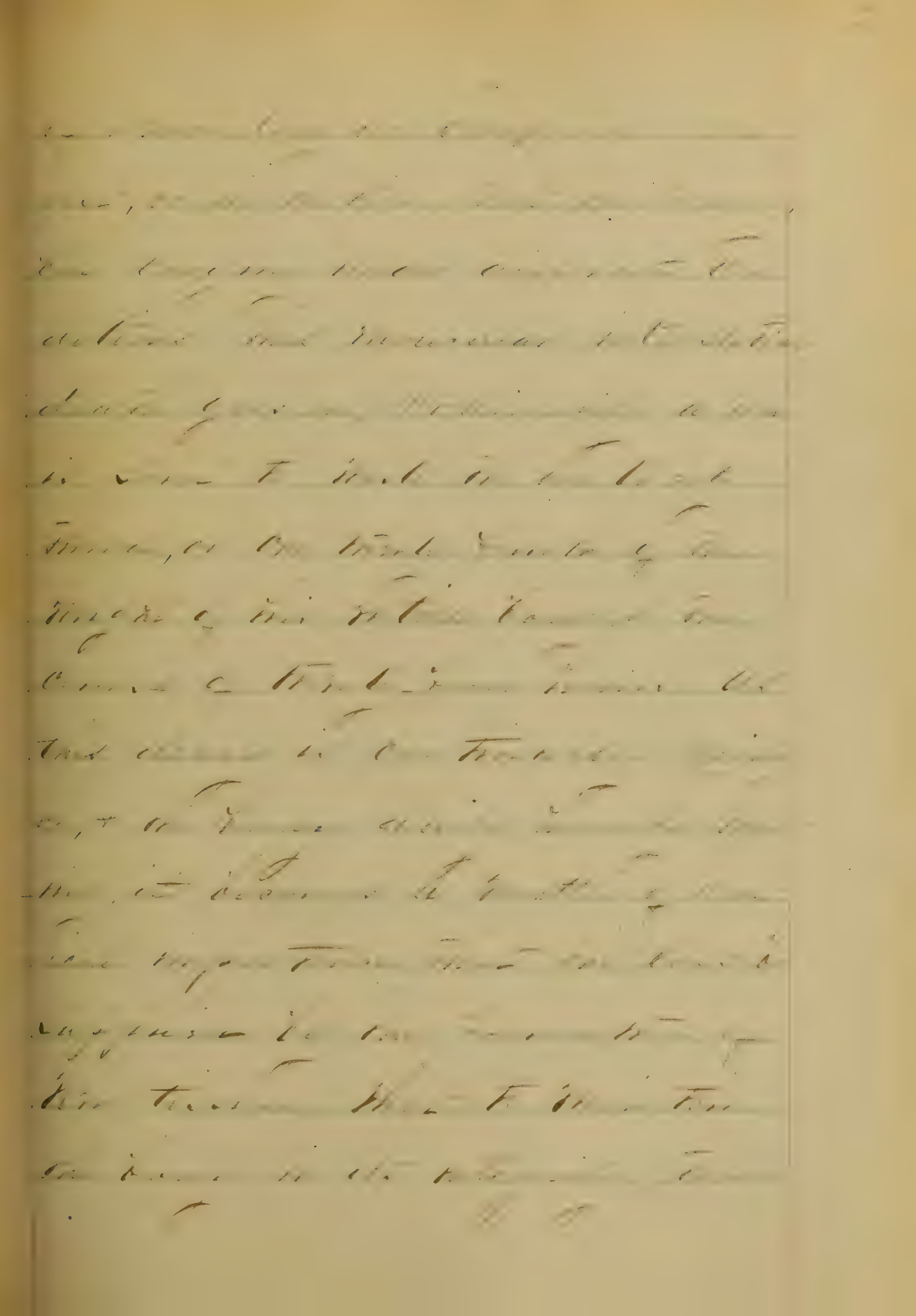
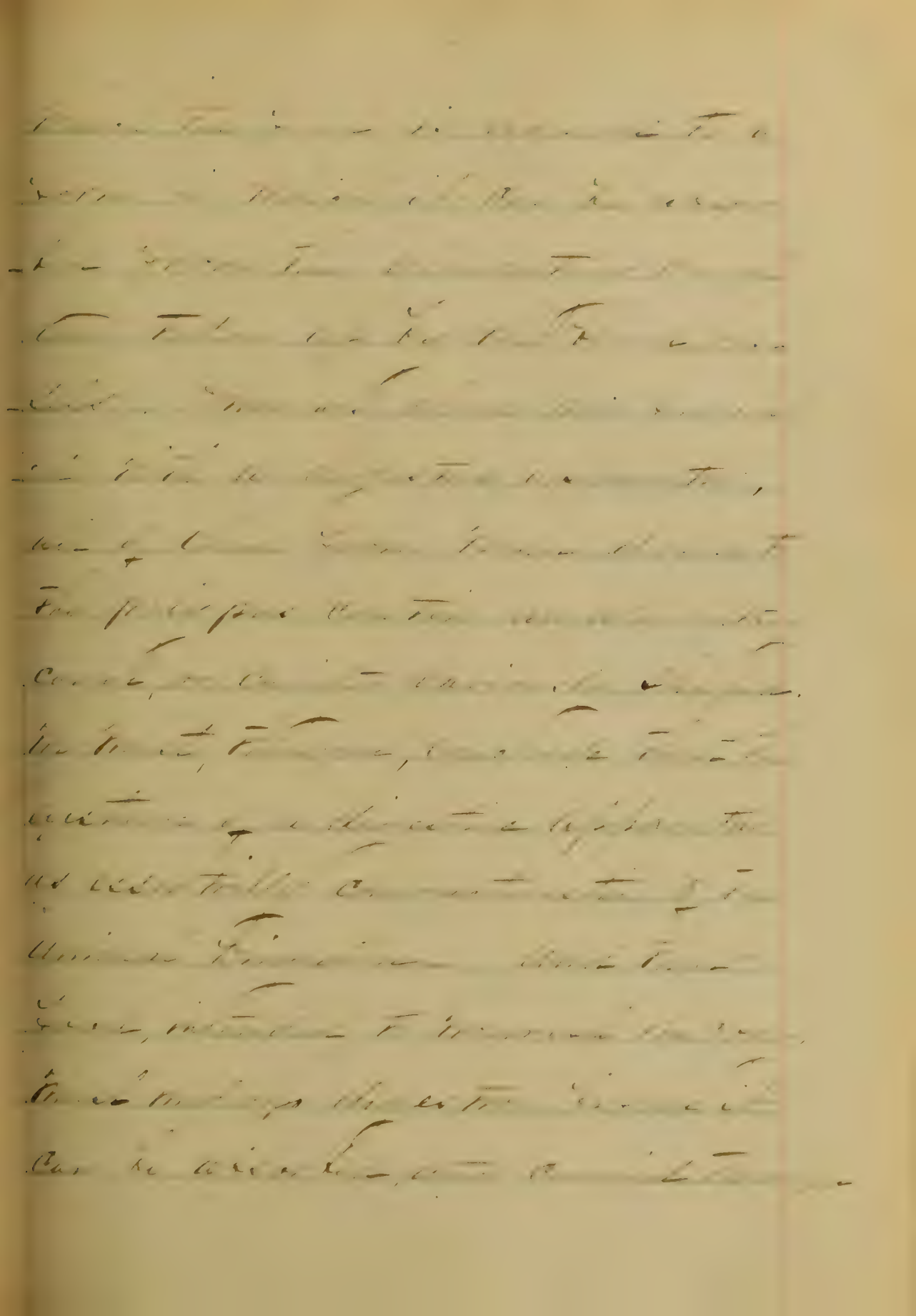
Session of [illegible] 18[illegible]





[illegible] its glands. The
Cellular Coat attaches the mucus
to the muscular, and serves for
the passage of vessels and [illegible].
Not only do we find the mucus
[illegible] differing in different
parts of the canal, but also the var-
-ious digestive fluids, [illegible],
on passing down, [illegible] no
less than five different fluids,
by the distinct action of which the
various alimentary substances in their
passage through the canal are
successively reduced to a fluid
form, transformed & rendered fit
for absorption, and assimilation.

The first of these fluids is formed in the Mouth - the Saliva, secreted by the salivary glands - & conveyed to the Mouth by ducts or canals. The most important of these glands is the parotid - Its principle office is to assist in mastication. The Submaxillary and Sublingual assist in deglutition. Human Saliva, as obtained from the Mouth, is a colorless, slightly viscid, alkaline fluid, of a specific gravity of 1005 - It is composed of Water, Organic Matter, Salts of Soda, lime & Magnesia as phosphates - of Chlorides of Sodium & Potassium, Sulpho-cyanide of potassium &

a mixture of epithelium, The organic substance is known by the name of ptyaline, A small amount of albumen also is present. Mixed with the ptyaline, The normal reaction of saliva is alkaline, Nevertheless, it varies during the day, being at times, decidedly acid, which is due to an excessive secretion of mucus. The reaction of which is normally acid. Regarding the quantity of saliva secreted daily its almost impossible to form any correct estimate, owing to the fact that the secretion is by no means constant, being almost, if not entirely, suspended by the

cessation of the muscles of mastication, and the tongue, unless excited by the artificial stimulus of food or some foreign body — hence during sleep the mouth becomes dry — if kept open, under the stimulating influence of food the saliva flows readily — and in exact proportion to its hardness & dryness — fluids generally do not excite the secretion of the saliva, but pass at once into the stomach. The most important question connected with this fluid is its digestive function, of which we will speak when we commence to study digestion in the different cavities of the alimentary canal.

The next, and most important, of the di-
-gestive fluids, is formed in the stomach.
The gastric juice which is secreted by
the gastric tubules or follicles and
the gastric mucus membrane especially
from those situated near the pylorus;
as obtained from the stomach of the
dog, by the experiments of Lehmann and
Bidder and Schmidt, its a clear,
very faint amber-colored, acid
fluid, of a specific gravity of 1010-
On being subjected to a boiling tem-
perature the organic constituents coag-
-ulate & slightly cloud it. It is com-
posed of Water, Organic Matter,
Lactic acid, Chlorides of Sodium

potassium, calcium & ammonium
& phosphates of Iron Magnesia & Iron,
" In place of Lactic acid Bidder and
Schmidt found hydrochloric acid.
Ehmann admits the existence of
hydrochloric acid at times, but contends
that the Lactic is the most abundant
and important of the two. According
to the experiments of Bernard the hy-
drochloric acid formed in the Stomach,
is due to the decomposition of some
of the Chlorides Calcium into Combina-
tion with the free Lactic acid. That
the acid reaction of the Gastric juice
due to Lactic acid is according to Ehm
& the last authorities an established fact.

Be that as it may, the free acid is one of the most important ingredients of the Gastric juice, for if its neutralized the solvent action of the juice upon food is destroyed - The organic matter, Pepsine - is equally if not more important - It is regarded as one of the real anatomical ingredients of the Gastric juice and as essential to its constitution. Is the active digestive principle of the digestive fluid of the Stomach, among the peculiar properties of the Gastric juice is its inaptitude to undergo putrefaction. If kept for a long time it will show no signs of any putrefac

tive changes — Another singular fact in connection with it, & one which has been a subject of great interest to many able physiologists, is that, although it exerts a solvent action upon all albuminoid substances introduced into the stomach, it does not attack, or destroy the walls of the stomach — For "Gastric juice is incapable of eroding living flesh" The following is the explanation given by Dr Dalton. The process of digestion is not a simple solution but a catalytic transformation of the alimentary substances, produced by contact with the pepsine of the gas-

tric-price. We know that all the organic substances in the living tissues are constantly undergoing in the process of nutrition a series of catalytic changes which are characteristic of the vital operations, and which are determined by the organized materials with which they are in contact, and by all other conditions present in the living organism. These changes, therefore, of nutrition, secretion &c, necessarily exclude for the time all other catalyses, and take precedence of them" — as soon as life departs these peculiar actions cease and the

Gastric juice remains in the stom-
ach readily attacks the living
membrane, and even the walls, dis-
solving them, as is seen in post
mortem digestion. Like the sa-
liva Gastric juice is secreted in consi-
derable quantity under the stim-
ulation of food only -
during the intervals of digestion
the stomach does not secrete gastric
juice - but immediately upon the intro-
duction of food the gastric juice is
poured out, & in sufficient quantity to
digest enough to supply the needs of the
system - When, to gather into the stomach
no substances fitted to stimulate it is a -

-gain reabsorbed - The quantity varies according to the kinds of food, and the mental and physical condition of the individual - It has been estimated that the total daily quantity secreted, & again taken back into the circulation is little less than 14 lbs (av) - The last of the digestive fluids which we have to consider are found in the small intestines, as the intestinal fluid is composed of three distinct secretions - bile, pancreatic and intestinal juice proper. They will be best considered when we come to speak of intestinal digestion and its various phenomena -

Digestion may be divided into the Subordinate Functions of Prehension, Mastication, Insalivation, Deglutition Gastric & Intestinal digestion and Defecation. Prehension is the act of laying hold of or seizing. Mastication is the means by which the food is bruised, ground or triturated, so that it may be readily acted upon by the digestive fluids. This is of great importance, for in subjecting any substance or body to the chemical action of a fluid its action is greatly facilitated by the substance being first broken into small fragments - presenting

a larger surface to the contact of of the fluid. If mastication is imperfectly effected the subsequent processes of digestion are liable to be deranged, doubtless there is no greater cause for dyspepsia than imperfect mastication - whatever be the cause - During the process of mastication the food is mixed with the first of the digestive fluids (the saliva), the function of which is purely mechanical. Its action tends to moisten the food and aid mastication and deglutition - It also, by virtue of its organic compound ptyaline, has

the property of converting starch into sugar - which was first discovered by Leuchs, of Germany - It was formerly believed that all amylaceous substances were digested in the mouth - The fallacy of such a theory is proven by the fact that food hardly remains long enough in the mouth to be properly masticated, and certainly not long enough to be digested - before being carried back into the stomach - That ptyaline has the property claimed for it is beyond a doubt, so also is the fact that amylaceous substances are thoroughly

digested in another part of the canal, to be spoken of hereafter. The action of the saliva may, therefore, be considered as simply a physical one.

After the food has been thoroughly masticated & mixed with the saliva, converting it into a bolus, it is carried backwards by the movements of the tongue into the pharynx and oesophagus, and conducted, by involuntary muscular action, into the stomach through the cardiac orifice, there to be subjected to the action of the gastric juice, as before said, the most important of all the fluids concerned in digestion

From the oesophagus the food enters the stomach in successive waves, and is immediately subjected to a churning and gentle triturating movement, the peristaltic movement peculiar to the stomach, the object of which is to thoroughly mix the gastric juice with, and aid in the the liquefaction, or solution of the mass — The bolus after entering the stomach is carried by the alternate contractions & relaxations of the longitudinal and transverse fibres of the muscular coat from the cardiac orifice into the splenic extremity, and follows the great

curvature towards the pylorus,
from thence towards the lesser curva-
ture makes its appearance again
at the upper orifice in its descent into
the great curvature, to perform similar
revolutions. The motion is at first
slow, and gradually increased as
digestion advances. There is also
towards the latter stage, an impetus
added impelling towards the pylorus. The
food is not only subjected to the
mechanical action of the stomach, but
also, to the digestive, and catal-
ytic action of the gastric juice. By
which catalysis all albuminoid
substances, contained in the food, are

transformed into a new substance called albuminose — from the moment the bolus enters the stomach the gastric juice begins to be secreted — and almost instantly attacks the albumin-ord substance, transforming them & returning again, with the new substance in solution, into the circulation, so that from the moment digestion begins there is a constant circulation of gastric juice from & to the stomach — By its action all, & only such substances as belong to the proximate principles of the 3rd class are digested & taken into the circulation — Digestion is strictly speak

-ing a chemical process - for food
outside of the body, in a test tube,
subjected to the action of gastric
juice at a temperature of 100° (F)
will undergo the same transformation
as it does in the stomach, Albumi-
nose is similar in character to all
organic substances, noncrystalliza-
-ble and contains nitrogen as one of
its ultimate elements, freely soluble
in water, & after once being produced
it remains in solution, and is ready
to be absorbed, unlike albumen
this not coagulable by heat, or nitric
acid - The length of time for
digestion varies according to the

kinds of food, & is influenced to a very great extent by external Anxiety - Anger. Mental emotion, fatigue &c all tend towards decreasing the amount of gastric juice - Food to be digested properly should only be taken when the appetite demands it; should be well masticated & mixed with the Saliva, & the mind and body should be free from any great disturbance.

Causes.

From the Stomach such portions of the Folus as have not undergone the process of digestion for instance those belonging to the proximate principles of the 2d class, pass through the

pyloric orifice into the third division of the alimentary canal, the small intestines, where the process of digestion is completed, As before stated all albuminoid substances are digested before leaving the stomach, some have supposed cane sugar to digested in the stomach but experiments have shown no trace of glucose in fluids drawn directly from the stomach, therefore, it must either be directly absorbed or pass into the intestines to be acted upon by the intestinal juice. That starch is not digested in the stomach is no longer a matter of doubt.

If a dog, says Dr. Dalton, be fed on boiled Starch and Meat, while some of the Meat remains in the Stomach for eight or ten hours the Starch begins to pass into the intestines immediately, where it is at once converted into Glucose, & as rapidly absorbed. The whole of the Starch may be converted into Sugar and absorbed in an hour. The theory that Starch is digested by the Secretion of the Glands situated in the mucus Membrane, the Follicles of Lieberkühn and Brunner's Glands, is acceded to by the most reliable authorities. Not only in the intestines will this

action take place, but if mixed with Starch, & kept in a test-tube at a temperature of 100° F, the Starch will be converted rapidly into Sugar. As obtained by experiments this fluid is said to resemble the mucus secretions of the mouth, colorless, viscid, glassy in appearance and of a decided alkaline reaction & possessing this peculiar property of transforming Starch into glucose. We have now seen the mode of the digestion of all albuminoid substances, Sugars and Starches. The only remaining nutritive materials are the fats or the oils. These

as we have seen are neither effec-
-ted by the gastric, or intestinal juices
i.e. the intestinal juice proper.
They are only melted by the warmth
of the stomach, and set free from
the vesicles, fibres &c in which they
are contained, and, in this condition,
pass into the intestinal canal,
according to Bernard only one
of the intestinal fluids is necessa-
ry for the digestion of fats, viz.
the pancreatic juice. The bile
assisting, to a certain extent, in their
absorption. Pancreatic juice is a
clear, colorless, slightly viscid
fluid of a very decided alkaline

reaction, composed of water, organic matter, chloride of sodium, free soda, phosphate of lime, sulphate of soda & potash, and combinations of lime, magnesia & oxide of iron, very soon after the fats enter the small intestine and are mixed with the pancreatic juice, they loose their characteristic appearance and are converted into a white opaque emulsion known by the name of chyle. This emulsion undergoes no further change, but is gradually absorbed

The active principle of the pancreatic juice is, like all the other fluids, its organic matter, pancreatine and

is more abundant in proportion to the other ingredients than the organic matter of any of the other fluids.

The action of this fluid on fats is simply to convert them into an emulsion, not to saponify, or chemically change them — and as such they are absorbed along with the other digested substances, & go to nourish the system, thus completing the process of digestion. From the mouth to the large intestines we have seen the various alimentary substances digested. The albuminoid converted into albuminose, the sugars into glucose, or as cane sugar absorbed

the Starches into sugar, & finally the fats emulsionized and as chyle bodies to enter the circulation - Whilst these various substances are undergoing further changes, not our province to speak of here, the bolus deprived of all nutritious properties passes from the small intestines, through the caecal valve, in to the large intestine, to be finally discharged as effete matter from the body, little, if any, absorption taking place in the large intestine The office of which seems only to separate and discharge the -

by excrementitious substances, the act
of the digestive process, the act
of defecation.

AN

Inaugural Dissertation

ON

Cholera Infantum

Submitted to the Examination

OF THE

Provost, Regents and Faculty

OF

PHYSIC,

OF THE

UNIVERSITY OF MARYLAND,

FOR THE DEGREE OF

DOCTOR OF MEDICINE,

By

David Mc-Gregor Shipley

Of

Baltimore — Md.

Session of 1870-71

Cholera Infantum.

This deadly disease is confined almost exclusively to the large cities and towns of the middle and Southern portions of the United States, where it destroys hundreds and thousands of the little ones every year. It is most prevalent during the hot months, gradually diminishing as cold weather advances. The period, at which they are most liable to be attacked by this disease, is between four and twenty months of age, or during the period of the first dentition. It occurs most frequently during the second summer of infantile life.

The exciting causes are, -

improprieties in diet and clothing; the action of a heated, impure, damp and stagnant atmosphere upon the skin, and indirectly upon the mucous surface of the digestive organs, at an age when it is strongly predisposed to disease from the effects of dentition. It is also aggravated by premature weaning, worms and various other circumstances

The first symptoms of this disease, is generally, a profuse diarrhaea, the stools being very thin, generally of a light color, though sometimes a pale green or yellow; sometimes inodorous, at others extremely offensive. Soon after the diarrhaea has commenced the stomach becomes extremely irritable, so that everything taken into it, is rejected immediately

with great violence. This irritability of the stomach continues, in most cases, throughout the attack, so that by constant vomiting and purging, the child becomes languid and prostrate, often in a few hours.

After the disease has continued for a short time, the discharges from the bowels are, ordinarily, composed of entirely colourless and inodorous fluid containing often minute flocculi, and are discharged without the least effort. They are sometimes, however, thicker and more tenacious; consisting chiefly of slime or mucous, or very small in quantity, and squirted from the anus. Very frequently the vomiting becomes suspended at an early period of the attack,

while the discharges from the bowels continue,
or augment in frequency and quantity.
The irritability of the intestinal canal
is often so great, that whatever food or
drink is taken, passes off rapidly, without
having undergone the slightest change.

The pulse, from the com-
mencement of the attack, is usually quick,
frequent, small and often tense; the skin
is dry and harsh, the head and abdomen
are often hot, while the extremities retain
their natural temperature, or are even cold.
The tongue is moist and covered with
a shiny mucous. There is intense thirst,
which for a time, seems unquenchable. Cold
water is swallowed with great avidity and in

large quantities, but it is immediately rejected. In severe cases the brain seems early to be affected sympathetically, as is manifested by a tendency to stupor or delirium, and sometimes even to frenzy.

When this is the case, the patient has been known to attempt to bite or scratch his attendants. The eyes also denote this cerebral disturbance and present either a fierce or vacant expression, and when the little sufferer sleeps, they are only half closed. The child suffers more or less pain in the abdomen, as indicated by its fretfulness, low moaning cries, frequent change of posture, the drawing up of the limbs and its occasional acute screams. The abdomen is sometimes tumid

and generally tender to the touch.

This disease generally runs a protracted course, but sometimes in violent attacks, the prostration, which suddenly ensues, is so great, that the patient dies in a few hours. Emaciation rapidly supervenes. The child, at first, becomes pallid and the flesh flabby; and so completely is the fat absorbed, that the integuments hang in folds; and in those parts on which the body rests, - livid spots appear, which may be soon followed by ulcerations. The skin on the forehead is tight, as if bound to the bone; the eyes are languid, hollow and glassy; the countenance is pale and shrunken; the nose

sharp and pointed, and the lips thin, dry and shriveled.

The surface of the body becomes cool and clammy, of a dirty brownish color, and often covered with petechiae. The tongue is dark, smooth and shining, or covered, as well as the parietes of the mouth, with aphthae.

The belly becomes tumid from flatulence, and the feet are very often oedematous. The mind, as well as the senses, which hitherto may not have been impaired, are now obtuse, or so entirely lost, that the child lies unmoved by ordinary excitement, and will even allow flies to collect on the face, without

being irritated or disturbed, in the least, by them. The fauces, becoming dry, causes a feeling of uneasiness, which often induces the patient to thrust his hand deep into the mouth, as if to remove some offending substance situated there. In many of the protracted cases, an eruption of very many white vesicles takes place upon the throat and breast. It was supposed, by some authors, that when these vesicles appeared, the disease was sure to prove fatal; but some cases have been reported, in which they have been seen and the patients have recovered.

The prognosis is very difficult; since death frightens most

unexpectedly in some instances, and recoveries take place in others where, apparently, there is little hope. When it assumes the form of Cholera Morbus, (as it sometimes does) it often proves suddenly fatal. But Cholera Infantum in its ordinary forms may be considered as doing well, when the pulse becomes slower, fuller and more natural; where the temperature is restored to the surface and equally diffused; when the irritability of the stomach and bowels subsides; and, above all, when the alvine discharges, previously denoting the want of bile, now consist of dark bilious stools or exhibit a more healthy appearance. In opposite

prognostication may be made, or at least, imminent danger is to be apprehended, where there is an absence of the favorable signs just enumerated; and particularly where, with a cold damp surface, there is a small, thready pulse, lank, haggard countenance; incessant vomiting of whatever is received into the stomach; purging of a pink colored fluid, or of greasy, fetid matter, attended with extreme nervous sensibility, or an entire suspension of it; the child lying with its eyes half closed and deeply sunken, or with occasional convulsions.

In protracted cases, the eyeballs become perfectly bloodshotten. This, although a very bad symptom, is not necessarily a fatal one.

The lesions exhibited by a post-mortem examination of those who have died from this disease, vary according to the period at which death takes place. When the disease has been of short duration, the mucous membrane of the alimentary canal has been occasionally found of an abnormal paleness, and the liver more or less congested. The brain presents no morbid appearances, in recent cases, except those of congestion; but in those which were more protracted

softening of the brain sometimes occurs and red spots are also seen, in some cases, in various parts of it. In a few cases inflammation of the meninges of the brain are met with. The viscera of the thorax are rarely affected; the disease mainly expending its force on the organs found within the abdomen. The effects of previous inflammation may be traced, in some cases, throughout the whole of the alimentary canal; though it is the mucous membrane, principally, which is affected.

There is often present, at different points of the stomach and intestines, increased redness in

points or patches. These red spots are sometimes very minutes and isolated, and spread over a considerable portion of the stomach and duodenum, or over the small intestines only.

Coagulable lymph is also, in some instances, spread on their surface, or is found in detached pieces. In many parts there is an alteration of their structure, by the thickening of their coats; so much so, that the calibre of the intestinal tube is considerably reduced. Occasionally, appearances, similar to those exhibited by the primae viae, may be seen upon the peritoneum, though not to any great extent. Sometimes portions

of the mucous membrane are found more or less softened, - often without the least signs of inflammation. The intestines are generally empty or contain merely a small amount of thick, tenacious mucous, which sometimes contains small quantities of fæcal matter, or it is occasionally tinged with bile.

The liver, under almost all circumstances, and especially in those cases which have been of long duration, is greatly enlarged; so that it sometimes occupies about two-thirds of the cavity of the abdomen. But although it is thus increased in size, there is not any very evident derangement of its struc-

tune. It is merely distended or swollen by congestion; and on this account is more firm and solid than it is during health.

The gall-bladder, in some instances, is found to be filled with dark green bile, and at other times, with that which is paler, or nearly colorless. The other viscera of the abdomen are usually healthy.

Treatment. — It is very important in the treatment of this disease, to have the child removed from the heated, confined and impure atmosphere, by which the disease has been generated; to a place where the advantages of pure air and free ventilation may be availed of; particularly a removal to the country. A change is frequently

noticed, as soon, almost, as the child gets into the pure country air. Riding the child out every day, in pleasant weather, will also have a beneficial effect; also, crossing the river in a boat occasionally, has been found to be highly beneficial.

The infant should be confined exclusively to the breast if possible; provided the milk of the mother does not disagree with it. If the child has been weaned - a diet may be given, consisting of fresh rennet whey, with the addition of Gum acacia, - Calves foot jelly, - tapioca, - arrow-root, - ground rice; or plain meat broths, or some cool and slightly mucillaginous fluid to drink.

Daily immersions in a warm or tepid bath should be employed. These have a great tendancy to equalize temperature, causing a glow to come over the entire surface of the body, while it benefits them in other respects at the same time. The baths may be rendered more effective, particularly, where there is much cutaneous insensibility, by the addition, to them of salt mustard or brandy &c. and after the child has been removed, friction may be employed with advantage.

As the disease generally commences with a disordered condition of the alimentary canal;

our first efforts should be directed to the evacuation of the stomach and bowels, if any irritating substances are contained in them. When the disease begins as a simple diarhaea, the warm bath, used daily, or even morning and night, followed by friction over the whole surface of the body with the hands or a soft piece of cloth; cold mucilaginous drinks, and a combination of calomel, prepared chalk & acetate of lead, repeated every three or four hours, will very often arrest it.

To subdue the irritability of the stomach, from the fourth to the sixth of a grain of calomel, rubed

up with a little dry loaf sugar, and sprinkled upon the tongue, will generally be found to be sufficient. Equal parts of lime-water and milk will very often allay vomiting and will also be useful as nutriment. Creosote, in small doses, together with lime-water has also been found useful. Sliced Syrup of Rhubarb with a little Magnesia may be given if the stools are acid. If the stomach is oppressed - 3 or 4 grains of Ipecac may be given and also some mild Cathartic. A mustard or spice plaster may be laid over the stomach. If there is indigestion, wine of Pepsin will be found to be useful. Where there is great

nervous excitement with intense fever - one or two leeches behind each ear may be found useful, and after the fever has abated - apply a blister behind the neck. When there is no cerebral disease. - Nervous stimulants, opiates, cordials, tonics &c. should constitute the basis of treatment. Various other remedies have been used with more or less success. The sleeping apartment should be dry and well aired, and the clothing consist of light, airy material.

A Dissertation
on
The Heart
by
G. T. Bowie
of Va.

1871

The Heart.

A thorough understanding of this organ, The Great Reservoir, through which passes all the blood of the body, both pure and vitiated, devolves upon the Student of Medicine.

We will first treak of its Anatomy; Secondly, of its Physiology.

(1). As an organ, it is Conical, hollow and muscular. Its position is between the lungs, and is surrounded by the Pericardium, a Serous membrane, it is also placed

obliquely in the Thorax, with its base extending upwards and backwards to the right, and its apex directed forward and to the left, extending to a point two inches below and one inch to the inner side of the left nipple, between the fifth and sixth intercostal Spaces.

It extends three inches from the median line on the left, and one inch on the right

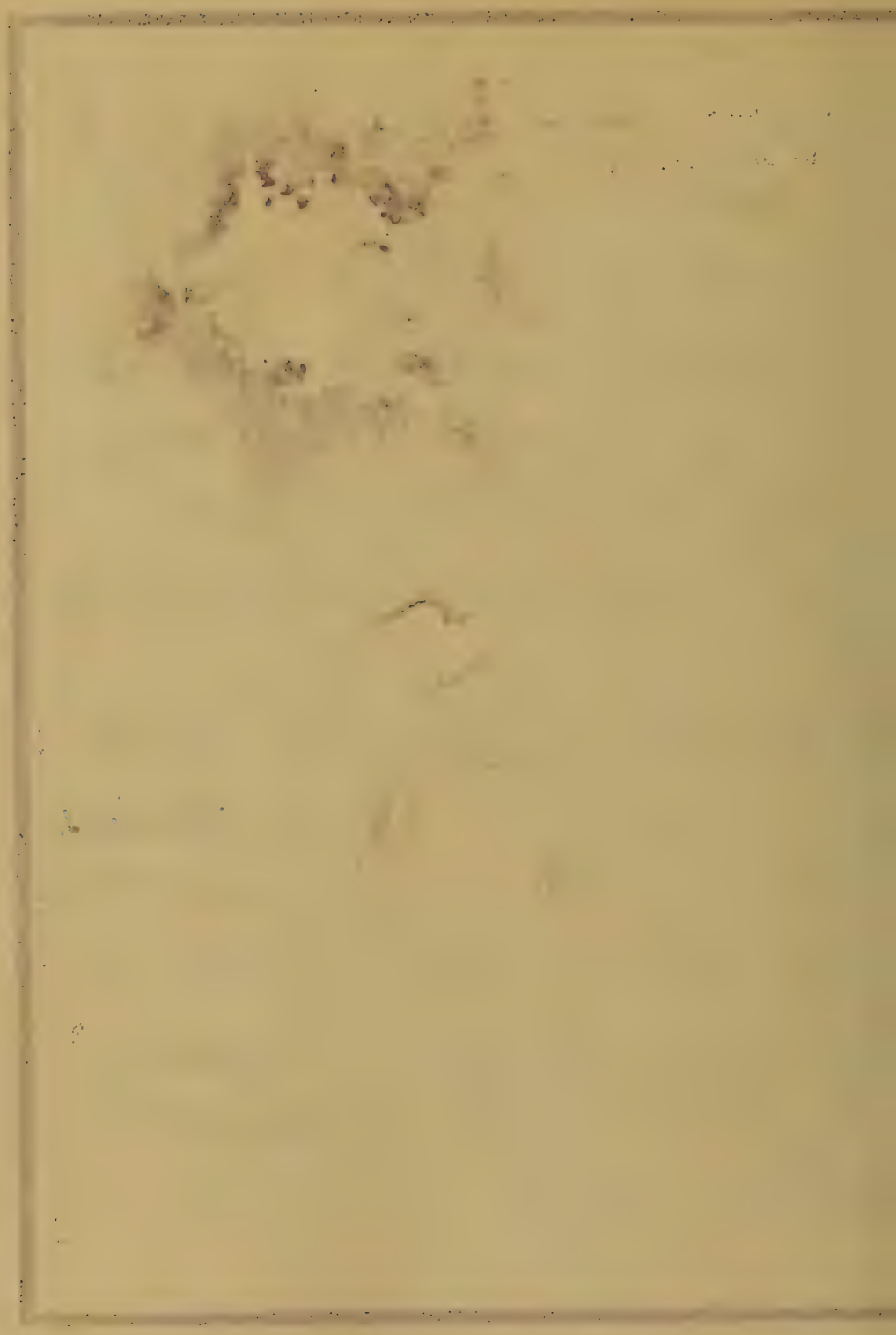
The anterior Surface of this Organ is rounded and Convex, and is formed chiefly by the right Ventricle

and a small part of the left.

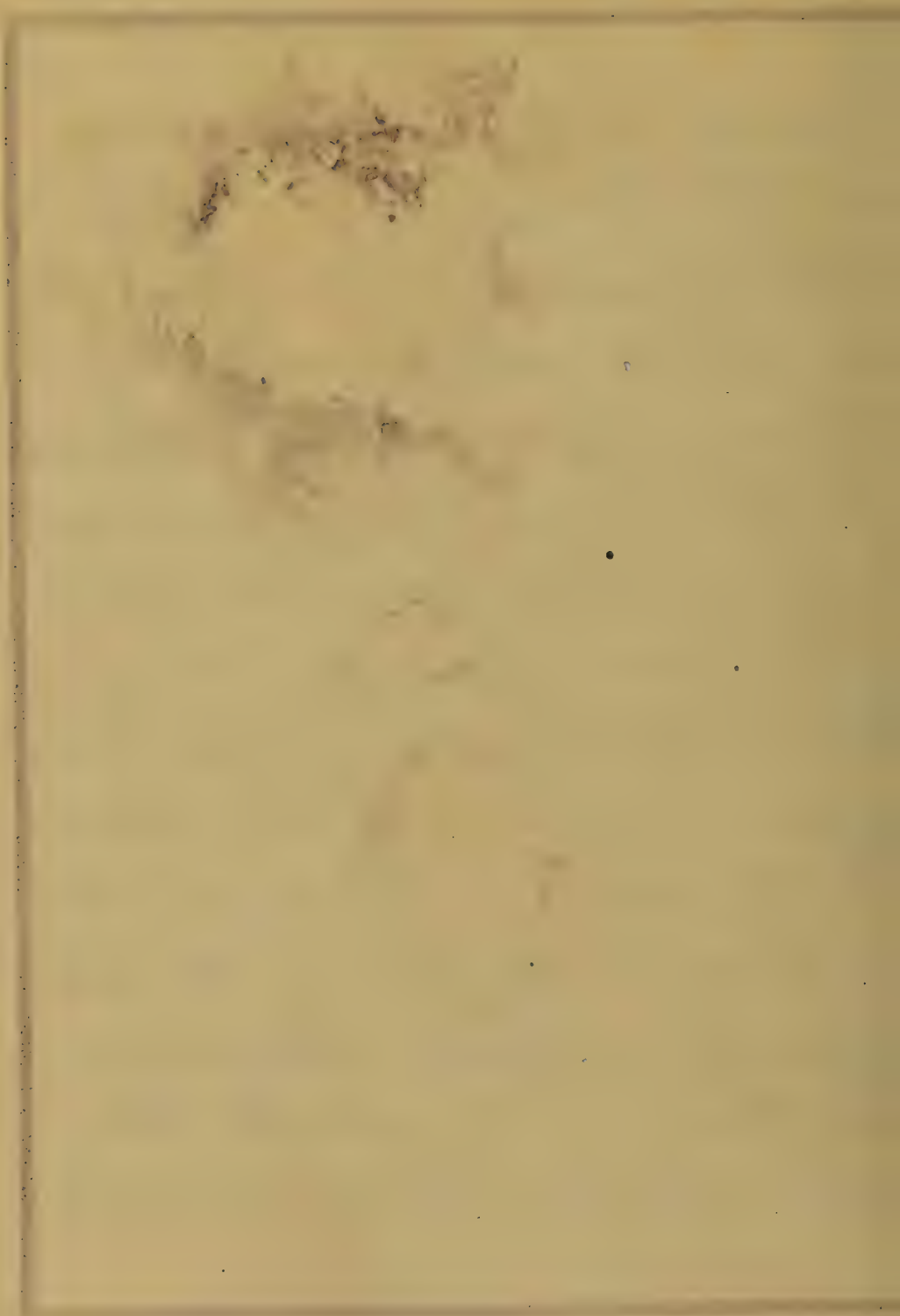
The posterior portion is flattened and rests upon the Diaphragm.

The adult heart averages five inches in length— three and one half inches in breadth, and two and one half inches in thickness.

Its weight in the male adult varies from ten to twelve ounces, in the female from eight to ten; and its increase in weight and dimensions, (is more marked in males than females) (upto an advanced age)

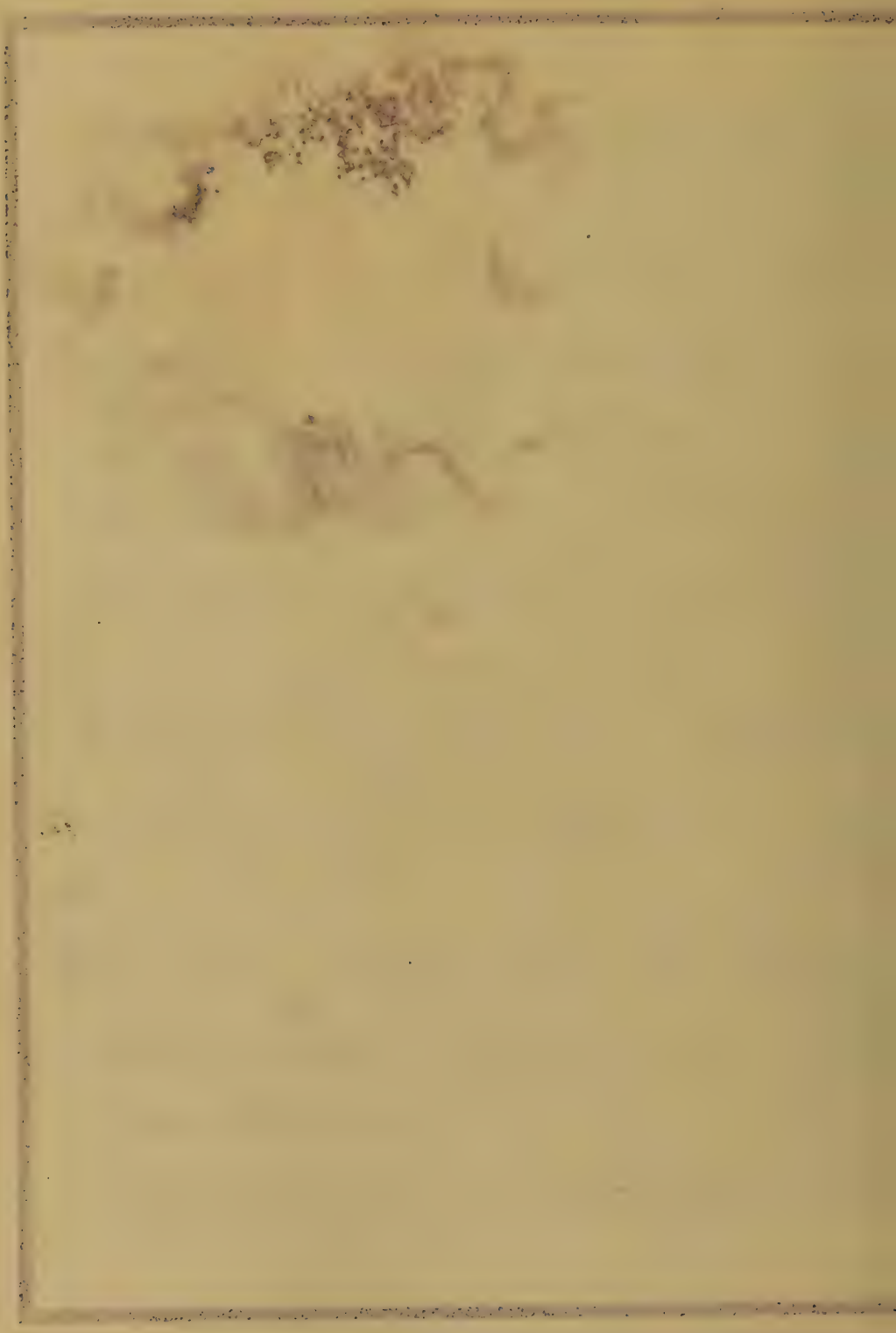


The Heart is formed at a very early period of fœtal life, in front of the situation of the œsophagus. It is at first simply a tubular sac, receiving the veins at its lower extremity, and sending off arteries from its upper extremity. During its growth it becomes twisted upon itself. By this change the entrance of the veins and the exit of the arteries are placed more nearly upon the same horizontal plane. The Blood passes through this twisted tube in a continuous stream, and passes



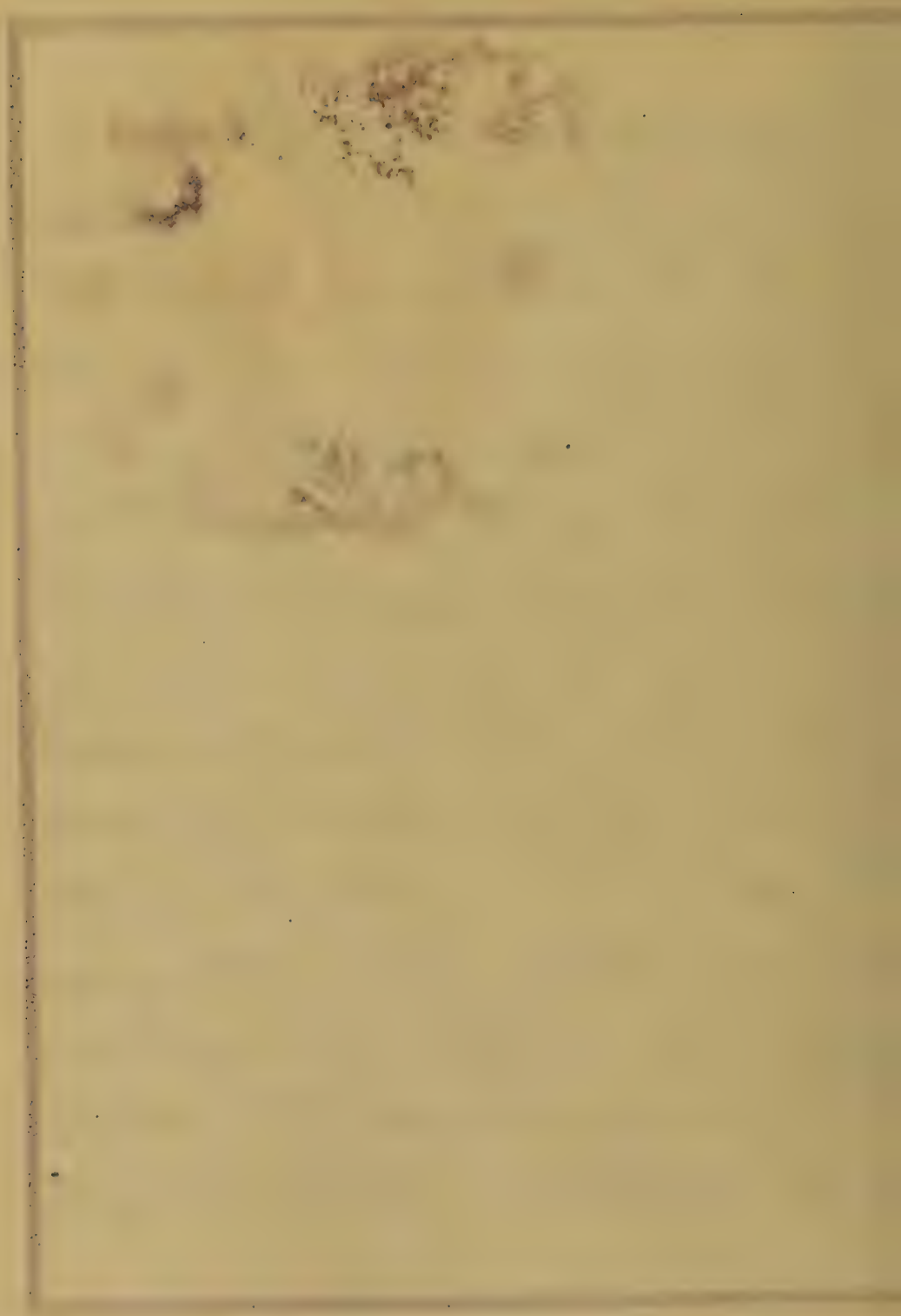
out by the arterial orifice.

This simple tube is afterwards divided into two tubes by a longitudinal partition, which follows the curve of the simple tube. This partition not only divides the tube, but also divides its arterial outlet, by which each new tube has an outlet. This longitudinal division is so situated, as to throw the Pulmonary arteries, which are given off about the same time from the arterial trunk, from the right division of the arterial trunk. In the next stage of development,

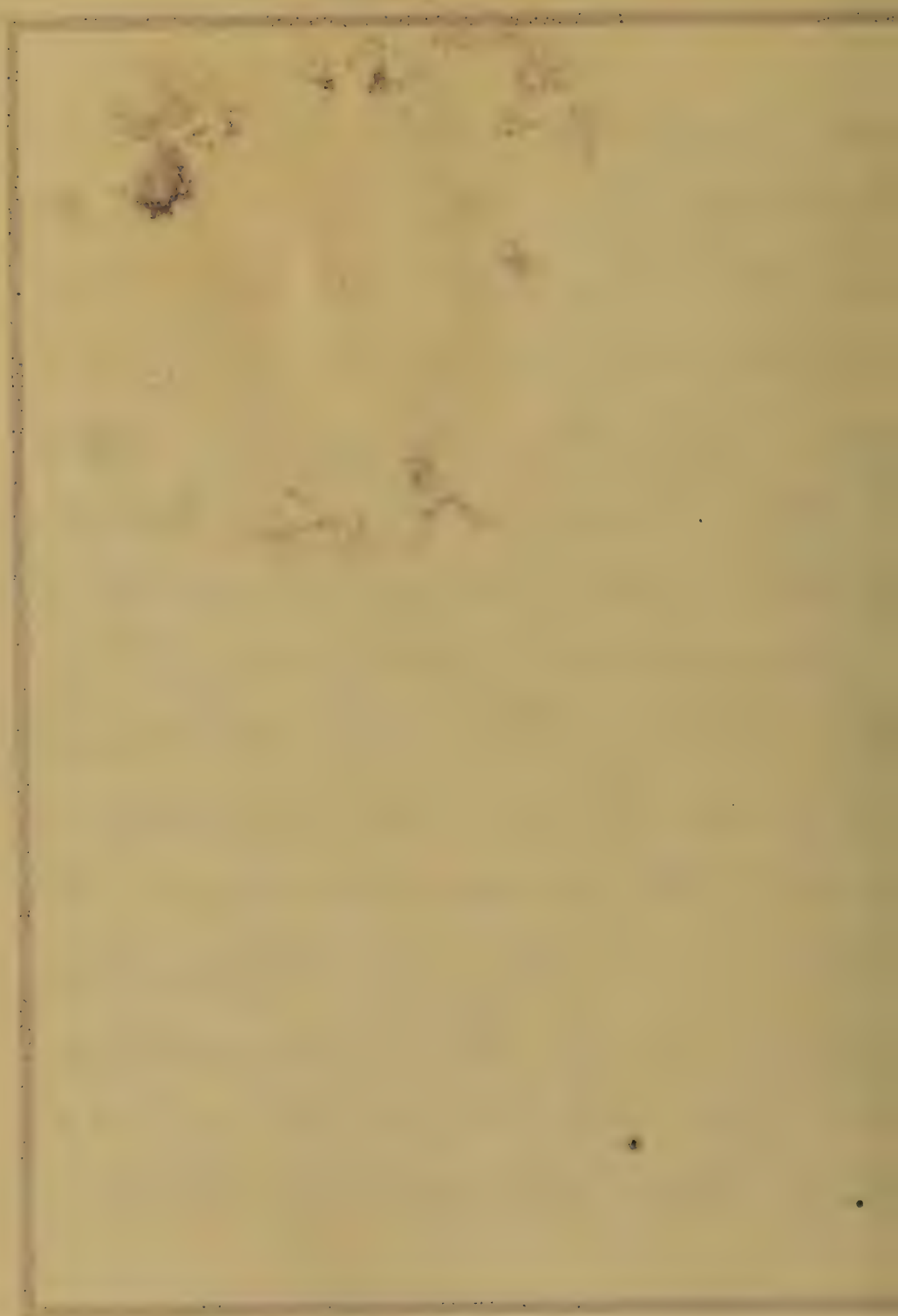


The longitudinal division which has previously been internal, now extends to the surface, and exhibits itself by a furrow, which corresponds with the internal Septum.

The division of the arterial trunk becomes much deeper, so that the divisions in the neighborhood of the Heart are separated from each other. The left portion becomes the Aorta, and the right portion the Pulmonary artery; higher up are given off from the latter, the right and left Pulmonary branches, to be distributed to the right and left portions of the



lungs. just above the origin of the Pulmonary branches, The Ductus Arteriosus, the Connecting link now between the Aorta and the Pulmonary artery, is given off from the latter, and runs upto the former. Most of the blood from the right Ventricle passes through this Duct to the Aorta, and thence to the upper Extremities. The remainder is sent through the Pulmonary branches to the Lungs, which are at this time in a very low Stage of development. Even at the termination of Foetal life, the Ductus Arteriosus is a vessel of some Size, and a Considera-



the portion of the blood from the Right Ventricle passes directly on to the Aorta, without being distributed to the lungs. The large size of the Ductus Arteriosus, and the smallness of the Bronchial branches are owing to the inactive performance of Respiration by the lungs. But at birth the lungs becoming more thoroughly dilated, — require a larger supply of blood; Consequently the Pulmonary branches become the principal divisions of the Pulmonary Trunk, and the Ductus Arteriosus, which had previously been so large, becomes contracted and

shrivelled to such an extent, that its cavity is obliterated; and it is finally converted into an impervious, rounded cord, which remains until adult life. The obliteration of this Duct, is complete, at the latest, by the tenth week after birth.

The Heart even during foetal life is divided into four cavities by Septa, one of which is horizontal, and separates the upper from the lower portions. This Septum between the auricles and Ventricles is perforated, so as to allow the blood to flow from the auricles to the Ventricles. But the

longitudinal Septum between the Ventricles is impervious, so that no blood may pass from Ventricle to Ventricle. The Extension of this Septum up between the Auricles is pervious during foetal life, and sometimes during adult life. But generally, at birth, this opening, which is called the Foramen Ovale, is closed either by the adhesion of the Valve to the edge of the Foramen, or by the Constant pressure of the blood in the auricles. The Divisions are named relatively to the Side of the Heart, they occupy (Viz). Right and left auricle, Right and left

Ventricle (1). The Right Auricle is a little larger than the Left, but its Walls are thinner. It Contains about two ounces of blood, and Consists of two parts, (1) the Main Cavity, and (2) the Appendix Auricular. The latter is — Small, Conical & muscular.

This Auricle has five openings, and two Valves. The two Venous openings are inlets for the Venous blood returning from the tissues. The Currents of blood entering by these openings cross each other in foetal life. The Current from the Superior Vena Cava passes in its Course through the Right Auricle

to the Right Ventricle the Course of the blood from the Inferior Vena Cava, which passes behind the Eustachian Valve, also behind the Cavity of the Right Auricle, through the Foramen Ovale into the Left Auricle. The Cavity of the Left Auricle is Smaller than that of the Right; but its walls are more muscular; Its divisions are Similar to those of the right. The Pulmonary Veins enter upon its Posterior portion. Between this Auricle and the Left Ventricle, we have the Auriculo-Ventricular opening It is Smaller than the Corresponding-

opening on the Right Side.
The Right Ventricle forms the larger portion of the front of the Heart. Its anterior portion is convex and its posterior flat and rests upon the Diaphragm.

The openings found in this Cavity are the Auriculo Ventricular and the opening of the Pulmonary Artery. The Tricuspid Valve guards the Auriculo Ventricular orifice; It Consists, as we might judge from its name, of three triangular Segments, formed by the doubling of the Lining membrane of the Heart, Strengthened

by fibrous tissue and some muscular fibres.

The Semilunar Valve guards the orifice of the Pulmonary Artery, and consists of three Semicircular folds of lining membrane doubled, and strengthened by fibrous tissue.

The Left Ventricle is longer and more conical than the right; and forms a very large portion of the Posterior Surface: but a very small part of the left side of the anterior Surface. By projecting lower than the right Ventricle, it forms the apex of the Heart

The Mitral and Semilunar valves guard respectively the Auriculo-Ventricular and Aortic orifices, which open into this Cavity.

These Valves both at their free and attached borders, are held in position by muscular fibres.

This organ is lined by a Serous membrane, the Endocardium, which is continuous with the blood vessels going to and from it, and also forms the Valves. In addition to the lining membrane, the Heart is surrounded by a Serous membrane, which is likewise attached to the blood vessels.

We will now take up its Physiology.

The double human heart is admirably arranged for carrying on the double Circulation of the body.

The venous blood filled, as it is with the waste of the tissues, is sent back by the two Venae Cavae to the Right auricle, thence through the auricul ventricular opening to the Right Ventricle, and thence again by the Pulmonary artery to the Lungs to be oxygenated.

This purified blood is sent by the four Pulmonary veins to the Left auricle, thence through the auricul Ventricular orifice to the Left Ventricle, to be

sent by the Aorta and its branches to the tissues. This thorough distinctness of the two currents is not found in any stage of foetal life, owing to the incomplete division of the Heart, and the Lungs not being the oxygenating organ, that process being carried on chiefly by the Placenta. The Cavities that we have spoken of, are always filled, and the blood is driven through by their Contractions. The Sound heard during the Systole, is caused chiefly by the flapping back of the Tricuspid & Mitral Valves, and the instant, these

Valves flap back, The Semilunar Valves open, so that the blood may flow on unimpeded.

We respectfully Submit to your Consideration, this Short Summary of the Anatomy and Physiology of the Heart.

Contains some novel [illegible] arresting hemorrhage [illegible]

AN

Inaugural Dissertation

ON Arrestation of Traumatic Hemorrhage

Submitted to the Examination

OF THE

Provost, Regents and Faculty

OF

PHYSIC,

OF THE

UNIVERSITY OF MARYLAND,

FOR THE DEGREE OF

DOCTOR OF MEDICINE,

By

John R B Hoskins

Of

Virginia

Session of 1870-71

Arrestation of Traumatic Hemorrhage

Various means have been used to arrest hemorrhage from arteries. Among them may be mentioned Spirit and by far the most important, the ligature. This method is of Arabian origin and was introduced by Parey. In order that a ligature may act advantageously, it is necessary that it should divide two of the coats of the artery, viz. the middle and internal. The advantage of this is to cause the pouring out of plasma, which seals up the wound and prevents the extension of suppuration. Long before the ligature cuts through the outer coat by absorption the lymph which was thrown out has become organised and prevents secondary hemorrhage

An artery may become obliterated without this division of the coats by agglutination, but sometimes the lymph is so thin that it is washed away by the

blood when the ligature is removed. In tying [illegible] none of the coats are divided but are merely pressed together. In this case there is no effusion of lymph which may serve as a barrier to the extension of inflammation, and hence the danger of phlebitis

Where an artery is ligated, the circulation is arrested and a clot is formed above and sometimes below though not [illegible]. When the blood is thin from any cause there is danger of the clot not being formed.

From two to six weeks is usually necessary to obliterate a long vessel. The ligature should never be pulled at. In preparing a ligature, procure saddlers silk and it should always be white. In tying an artery you should make use of a steady pressure until you feel the coats give way.

The thread should be well waxed, and the double or Surgeons knot always used.[2] After tying, cut off one end near to the knot and [illegible] the other outside of the wound. When we operate on the intestines we have to cut off both ends. The objection to the animal [illegible] is that it may be absorbed before obliteration of the vessel takes place.[2] To tie an artery after an operation, or one that is superficial you need either a tenaculum or a pair of common artery forceps. To seize an artery with the tenaculum, you insert it in the vessel and always carry it through and through and then draw it out to separate it from its vein and nerve. When the vessel is too small to be seen, insert the tenaculum through the bleeding surface and [illegible] behind. When you use the artery forceps insert one + blade in the orifice of

the bleeding vessel as in case of the [illegible]. When the surface is deep and hollow you pass one tenaculum and then draw out the bleeding surface as much as you can and then insert a second one at right angles to the first and tie behind both. When the artery is diseased and too soft to bear the ligature, you may 1st draw out the tissue surrounding the vessel and tie that together with the mouth of the vessel which forms a sort of cap. Ord 2nd you 11 insert a common needle through the orifice and then apply a ligature above. 3rd insert a bougie into the vessel when ossified and tie over that? 4th consists in inserting into the bleeding orifice a piece of muscle one end still attached and tie [illegible]? In applying the ligature to a vessel in its continuity, you must

cut down to it, separate it from its venae comitis and nerve, you must in doing this denude the artery as little as possible or you will cause its death After doing the above pass under the vessel a grave director and along its gutter pass a common needle with its point broken off and then tie the thread as before directed. or instead of this use the common aneurismal needle, or if you have not the above instruments, you can make use of the common eyed probe bent to suit the necessities of the case When the vessel is deep seated you can use the needle and forceps of Dr Physic

In applying the ligature to large and deep seated vessels, such as the subclavian, or femoral. the tenaculum modified by Dr Gibson is

perhaps the best now in use.
The subcutaneous ligature should only be applied to veins and not to arteries. The ligature of reserve is the lodgment of a ligature an inch or two higher without tying it, but the tourniquet is preferable to this
Scarpa's ligature consists of a flat ligature having interposed between it and the vessel a cylinder which acts by compression and not by dividing the coats.
Another is the double ligature and section which consists in applying two ligatures and dividing the vessel between them
The temporary ligature, is merely the application and removal of the ligature it should not be used
Torsion. consists in the seizing and drawing out of the artery

with the forceps [illegible]
or simply turning it [illegible]
own axis. It acts by lacerating
the internal and middle coats
and twisting the external
The turning should never be
more than twice and a half
This method must be limited
to small arteries
In applying it to large vessels
you run the risk 1st of the
untwisting of the vessel and 2nd
of sloughing of the knot made
by the twist
Machure consists in merely
crushing the extremity of
the vessel and should be con-
-fined to small vessels in plas-
-tic operations
Inversion consists in the
pulling out of the vessel with
a pair of forceps and crushing
it with a second pair and
then pushing the extremity
back in the orifice of the vessel

Compression the next in importance
a the ligature may be used either
temporarily or permanently, it may
be applied directly or indirectly
It may be applied in the ex-
tremities over bone or in
Cavities. In deep penetrated wounds
you use the graduated compress
which should be made of
Compressed Sponge. This should be
kept in place for 48 hours by
the hand of an assistant or
a roller bandage. It should not
be removed but allowed to
remain until suppuration takes
place or at all events you
should not remove the deeper
pieces. If secondary hemorrhage
should occur, you must remove
all of the compress and begin
a new one. To make use of com-
-pression after the operation for stone
in the bladder you use Dupuy-
-trens Canula. To stop hemorrhage
from the nose plug up the anterior

an posterior nares. The [illegible]
of Petit is perhaps the best [illegible]
and will answer very well to [illegible]
the larger vessel of the extremities
Refrigerants. Cold air is perhaps the
best, but ice may be used in
certain cases with great benefit
Styptics and Absorbents. These with
some few exceptions have been
discarded as useless. The [illegible]
of iron deserves perhaps the highest
praise. The Muriatic Tincture of iron
has been used with benefit
Creasote is especially useful in hem-
orrhage from the lungs. Spirits of
Turpentine has been used with good
results. Styptics are most useful
in oozing surfaces such as an
extensive abrasion and in arresting
hemorrhage after extraction of teeth
All the solid Styptics should be dis-
-carded with the exception of powdered
resin
Actual Cautery This is nothing more
than the rapid and superficial [illegible]

[illegible] The [illegible] should be
made as dry as possible with sponge
or lint before applying the cautery
The [illegible] should be heated to whitenessy
This is the 3rd more important mode
of stopping hemorrhage
Suture is perhaps the most [illegible]
of modern applications and is now
rarely if ever used
Plugging should never be used
unless the artery is diseased
Acupuncture and Electropuncture may
be usefully employed in cases of
secondary hemorrhage from aneurism
When it is impossible to tie the main
artery again to use it pass a punc-
ture needle through the artery
and then apply it to the pole of
a battery. This will sometimes
cause coagulation of the blood
and thereby arrest the bleeding

AN

Inaugural Dissertation

ON

Pernicious Intermittent Fever,

Submitted to the Examination

OF THE

Provost, Regents and Faculty

OF

PHYSIC,

OF THE

UNIVERSITY OF MARYLAND,

FOR THE DEGREE OF

DOCTOR OF MEDICINE,

By

Fleming E. Jones

Of

Mississippi

Session of 1870 & 1871

(Thesis)

Congestive, malignant or pernicious intermittent - fever.

We will first consider the definition of fever. It is derived from the latin fervor (heat) or februo I (purify) and is one of the most frequent and afflicting dangerous affections, to which the body is liable.

We say a person has an attack of fever, when he has a quick pulse, with an increased temperature of body, much thirst, - languor - lassitude, &c. It is not char-

acterized by any one of these, but by the coexistence of many symptoms.

Fevers are divided into the essential and symptomatic. The essential arise without any obvious local cause. The symptomatic are dependent upon some local irritation. Essential are divided into several classes, viz., intermittents, remittents and exanthematous. These divisions admit of great varieties according to climate, soil, age &c. Its exciting causes

are numerous, irritations in the intestines. Internal injuries. Stimulants &c. are some of the most common causes, while some of the specific are "miasmata", "contagion" &c.

Great diversity of opinion exists as to the theory of fever. Some supposing its primary seat to be in the brain, mucus membrane of the intestines and stomach, in the nerves bloodvessels. liver, pancreas, or mucus membrane of some other internal organ.

Congestive fever is a malignant-
destructive "malarial" fever, which
may be either of the inter-
mittent - or remittent - form.
The pernicious attacks are
of the tertian or quotidian -
type. While they are at their
height - there is intense congest
-ion of one or more inter-
nal organs - and with an
abnormal condition of the
circulation. A dangerous -
perversion of the function
of innervation is brought -
about. From this state the
patient - may rally, but -

only to be the victim of another seizure, unless "art" intervenes to ward off the impending doom. The symptoms vary according to the organ disturbed, and to the extent of the derangement of the nervous system. We have, thus, several distinct varieties, of which the Gastro-Enteric - the Thoracic - the Cerebral, are the most prominent. - The Gastro-Enteric form is very common in the Southern States. Its distinctive features are nausea

and vomiting. Purging of watery discharges. Thirst &c. There is a little abdominal pain with a weak and frequent pulse. The thoracic variety is apt to be combined with the preceding. Its most characteristic feature being dyspnoea, caused doubtless from congestion of the lungs. It is probably the most fatal of the forms of this dangerous affection. The cerebral variety is characterized by intense

congestion of the brain. Sometimes effusion into the ventricles, of serum, takes place, or even exudation of the bloodvessels. This abnormal state is manifested either by coma or delirium; and symptoms varying according to the case. When coma is marked, the symptoms resemble those observed in apoplexy; while on the other hand, when delirium is manifested, we have much the same morbid phenomena as in acute -

meningitis. The patient is wild, he sings, he cries &c. There is another variety of this affection, called the "Algid" form, but it is scarcely ever seen in this country, & consequently but little will be said about it. The pathological characters of this malady are a somewhat mooted question, some averring that there is congestion of the organ upon which the disease has settled, while others impugn the

correctness of their assertions. In my opinion as one who has observed the symptoms as they manifest themselves, I would unhesitatingly conclude that there was overpowering congestion. Enlargement of the spleen, and other pathological changes follow the unchecked march of this destructive and rapidly fatal disease.

In other words, as regards the pathology of the "pernicious" type with that

of the "ordinary" all that can be said is, that they differ only in intensity. Whilst the essential morbid condition existing in the latter, does not involve much danger, in the former it is highly dangerous. The difference as regards gravity is not observed in post mortem examinations.

The diagnosis of this disease is easy when we take into consideration the surrounding circumstances. It being liable

only, to be confounded with acute meningitis, or Apoplexy, from which it can be differentiated by closely observing the symptoms and taking into account the climate, season, visions of the individual &c.

Prognosis rather favorable where medical aid is solicited in time, for doubtless many have been saved by timely medical intervention, whilst on the contrary many have gone to "sleep that sleep that knoweth no waking."

by too long postponing what was for their welfare viz, the calculation of Aesculapian aid.

Treatment.- Pernicious intermittent fever is often preventable. It may be interrupted before it assumes a pernicious character. On seasons, when this type is known to prevail, the curative treatment should, as soon as possible, be resorted to, in order to check this formidable malady in its incipiency. When the disease has become pernicious; there are two

Great objects of treatment.
One is to carry the sufferer
safely through an existing par-
oxysm, the other is to prevent
another. As regards the first
of these objects, the indications
differ according to the form
the paroxysm assumes and
according to the symptoms,
whatever the form may be.
Enfeebled cardiac action, calls
for Stimulants - Alcoholic, aro-
matic &c. When danger is
manifested chiefly by symptoms
referable to the circulation. In
such cases, the important indi-

-ication is, to strengthen the action
of the heart. Coma, unless accom-
-panied with augmented force
of the heart's action, and increa-
-sed temperature, does not call
for venesection. Bloodletting
has been employed in the cold
stage, but according to Dr
Flint, it ought never to be
resorted to, unless there is active
cerebral congestion. Coldness of
the surface, calls for the exter-
-nal application of heat, by
means of warm blankets, bot-
-tles of warm water &c; and
also for the internal use of

Stimulants. Vomiting & purging must be restrained by opiates given either by the mouth or rectum. When restlessness delirium & convulsions are manifest we relieve them by the administration of anodynes. Emetics & cathartics given at the commencement of a paroxysm are said to be of doubtful utility. Chloroform has been recommended by several distinguished physicians, as a means of abridging the cold stage. These Gentlemen direct that it should be given in drachm

does, until the Therapeutic effect is produced. This remedy is deserving of further trial.

The second object—and an important one it is—to prevent another paroxysm—should enter into the treatment before the preceding one has subsided. With this object in view, nothing can take the place of the preparations of Cinchona. As to the dose in which this drug should be administered, there is good deal difference of opinion. Some believing it to act

most effectually when given
in small doses often repeated;
While others contend that it is
safest to administer large
doses in the beginning. It
seems to me best to begin
with, say, 15 or 20 grs of the
sulphate of Quinia, before the
paroxysm has ended
as our sole & all-important
object is, to prevent another
attack — and after several
hours have elapsed, if Cinchon-
-ism is not produced, repeat
sufficient Cinchonism being ma-
-nifested by "Tinnitus Aurium"

slight deafness & a roaring noise
in the head. The effect of the
drug should be maintained regard-
-less of the quantity during the
intermission, bearing in mind
that excessive cinchonism is
not advisable, since there are a
few cases on record of perma-
-nent blindness & deafness having
been produced by its superabun
-dant use. Should we not be
able to procure any of the preparations
of Cinchonia, there are a few succe-
-dana. "Viz" Salicin Arsenic & others.
A consideration of which space will
not admit. - Fleming & Jones
Mississippi

An

Inaugural Dissertation

on the

Circulation of the Blood.

Submitted to the Examination

of the

Provost, Regents and Faculty

of Physic

of the

University of Maryland.

for the Degree of

Doctor of Medicine

By

M. Peter Frey.

of

Frederick County Md.

Circulation of the Blood

First as expressive of the importance of the blood. It is distinguished as the vital fluid. In literature, and common parlance it represents life. — Life's blood is a common expression — To have one's blood is, to take life.

The importance of the blood is shown by the fact; that its presence in all the so called vital organs, is indispensible to the exercise of their functions.

A striking and familiar illustration of this fact, is afforded by the temporary loss of the mental faculties and consciousness. As a

result of a momentary arrest of the circulation and supply of blood to the brain, producing syncope and fainting. The blood in fact may be considered the grand condition of vitality. Its detention from a part occasions the molecular death of the part, that is, Gangrene or Sphacelus. Deabstraction beyond a certain limit from the body occasions general or somatic death. The suspension of its distribution by an arrest of the hearts action for two or three minutes only is fatal.

It was not until the commencement of the seventeenth century that any precise ideas were entertained regarding the general circulation. In antiquity the erroneous opinions prevailed; The arteries prior to this time being regarded as tubes for the conveyance of some aerial fluid to and from the heart, whilst the veins conducted the blood but whether or for what purpose was not understood. The names given to the principal arterial vessels, the Aorta and the arteries themselves sufficiently show the function originally ascribed to them.

However this may have been all [illegible] Harvey [illegible] of [illegible] of [illegible] it. The honor of the discovery is therefore his, and by it his name has been rendered immortal [illegible] importance in the physiology and pathology of the animal fabric is [illegible].

It was in the year 1616 that Harvey attained a full knowledge of the circulation published it in 1617 and taught it in 1628.

[illegible] with the corresponding ventricle but not with its fellow, being separated from it by a complete partition.

In the foetus this dividing wall exhibits an opening called the foramen of botal which grows smaller as pregnancy advances and is wholly obliterated after birth.

In the adult the pulmonary artery divides into two large branches one going to each lung. These ramify throughout its ultimate tissue distributing therein the venous blood derived from the right ventricle. The blood is next taken up by the radicles of the four pulmonary [illegible]

and carried back to the left side of the heart and emptied into the left auricle. This vascular circle is interrupted in the foetus in which the two pulmonary arteries are very small although their common trunk gives origin to a voluminous canal which opens directly into the arcus aortae and is called the arterial canal or the ductus arteriosus.

The term circulation is applied to that motion by which the blood setting out from the heart is incessantly carried to all parts of the body by means of the arteries, and returns by the veins to the [illegible]

whence it began its circuit.

The use of this circulatory motion is to expose the blood, changed by mixing with the lymph and chyle, to the air in the lungs; and also to convey it to several viscera in which it passes through several steps of purification, and then to send it into the organs whose growth is to be promoted or whose losses are to be repaired by the nutritive and animalized part of the blood, brought into a state of perfection by these successive processes.

To understand thoroughly the mechanism of the function,

It is necessary to note first, the action of the heart, the arteries which arise from it, and lastly that of the veins which enter it. The union of these three classes of organs forms the circle of the circulation.

Of The Action of the Heart.

In man and in all other warm blooded animals the heart is a hollow muscle. The inner part of which is divided into four large cavities which communicate with each other. From these vessels arise which convey blood to all parts of the organism and the vessels which bring it back from those parts

likewise terminate in this cavity.

Now having acquired the general [illegible] and action of the heart let us next see what is the course of the blood in the foetus, which is far different from that of the adult circulation.

A part of this fluid circulating in the umbilical vein is therefore discharged by the venous canal directly into the vena cava ascendens through the ductus venosus; another part is distributed to the liver through the branches of the umbilical, where it probably undergoes as above stated, some purification and thence is

brought back by the hepatic veins to the vena cava ascendens. Consequently all the blood from the umbilical vein reaches the inferior cava directly or indirectly.

The blood contained in the latter is therefore a mixture of that which returns from the inferior extremities and of that poured into the liver by the vena porta with the addition of the portion contributed by the umbilical vein. This compound reaches the right auricle through the inferior cava where it only mixes partially with the blood of the upper extremities brought there by the superior or descending cava

Because in passing into the auricle the blood of the inferior cava is directed towards the foramen of botal and hence passes through this opening into the left auricle and thence into the left ventricle through the ventricular orifice guarded by the mitral valves. By the contraction of this ventricle the fluid is forced into the Aorta; its impetus being broken by the curvature of the artery and the blood then passes into the vessels which arise from the arch and is distributed through them to the head and upper extremities; a very small portion of it

reaching the descending aorta and the lower parts of the body. The blood after having supplied the upper extremities is collected by the veins which by their successive union form the superior cava, the latter empties into the right auricle and passes immediately into the right ventricle through the ventricular orifice guarded by the tricuspid valves. Then by the contraction of this ventricle the blood is forced into the pulmonary artery. The vessel sends but a small portion to the lungs the rest being thrust into the ductus arteriosus which empties into the aorta below its curve;

that is to say the blood which has contributed to the nutrition of the superior part of the body and has traversed the descending cava, the right auricle and ventricle and the pulmonary artery and finally has passed through the ductus arteriosus mingles with the remnant of blood still existing in the aorta. The whole now descends to the inferior part of the latter vessel, where a small portion of it is sent through the arterial trunk to supply the lower extremities whilst the much larger portion is driven through the hypogastric arteries into the umbilical arteries,

and is carried back by them to the placenta, where after having undergone the modifications produced by the placental respiration, it is again taken up by the radicals of the umbilical vein to once more traverse the same circuit.

Changes in the Circulation at birth.

At once as respiration becomes established the sanguineous current takes another direction, because on the one hand the fluid flows around the lungs and greatly facilitates the other hand the placental respiration is forcibly interrupted.

Below I will subjoin the results and labors of Billiard.

Says Billiard. The foetal openings are generally obliterated in the course of a week after birth, still they may remain patulous at that age.

The umbilical arteries are usually closed on the second day and gradually change into a fibrous chord; the whole process being completed in three weeks.

Says [illegible] the arterial canal and the [illegible] of foetal are the last to [illegible] this [illegible] but they [illegible] [illegible] the eighth or ninth day.

Adult Circulation

In commencing this it is necessary to bear in mind the changes that take place after birth or after respiration is fully established.

The blood which traverses the ascending and descending vena cava enters the right auricle during the dyastole of the heart and thence passes into the right ventricle. then by the ventricular systole or contraction the blood is forced into the pulmonary artery which vessel is completely distended owing to the elasticity of its walls. then when this vessel contracts the blood is prevented from entering

the heart again by the semilunar valves. The blood which has been forced into the pulmonary artery passes to and circulates through the lungs and returns, as arterial blood through the four pulmonary veins, to the left auricle on the left side of the heart whence it passes through into the left ventricle and thence into the aorta in the same manner with that on the other side as just described. The blood then being forced in the aorta takes its circuit going even to the minutest extremities of the capillaries where it goes for nutrition or the repair of the organs and returns

as venous blood, through the veins
to the right side of the heart
where it again commences its pow-
erful circuit.

Peculiarities of the Circulation in different Tissues

In certain portions of the human
body there are certain varieties in
the distribution and the functional
action of the blood vessels.

Of these we have in the first
place to notice the apparatus for
the pulmonary circulation; the
chief peculiarity of which is that
venous blood is sent from the heart
to the lungs, through a tube which
is arterial in structure.

And whilst arterial blood is sent from the lungs to the heart through vessels whose anterior structure is that of veins. The portal circulation again is peculiar as being a kind of an offset from the general or systematic circulation and also being destitute of valves.

Dr. Prof. Donaldson it may be assumed with much probability that the purpose of their absence is to allow of an unusual free passage of blood from one part of that system to another during the varying conditions to which it is subjected.

Phenomena of the circulation in the arteries

The blood, expelled from the heart by the series of movements described, enters two elastic tubes, or blood vessels the pulmonary artery from the right ventricle and the aorta from the left the former of which sends it to the lungs and the latter throughout the arterial system: and in both vessels the blood is prevented from returning to the heart by the semilunar valves. The arteries are composed of three coats. The external a white fibrous tissue, the middle a yellow elastic tissue,

The inner a serous tissue continuous with the endocardium. But these coats differ in different arteries: the elastic tissue decreases as we leave the heart and the muscular tissue increases. Therefore when we reach the small arteries there is little or no elasticity but great contractility. The eminently extensible and elastic character of the arterial walls thus gives a peculiar feature to the arterial circulation, and is turned to good account in maintaining the flow of blood in that system of blood vessels.

The arteries yield and become dilated to a certain extent at each systole of the heart: but varies in different arteries, and at different times, with respect to the force of the heart and extensibility of the arterial walls.

The dilatation of the arteries calls into play a force which in some degree replaces the heart's force. Therefore the movement of the blood through the arteries is principally caused by the heart's contraction but at the same time regulated and modified by the elasticity of the vessels.

The blood being forced into the aorta by means of the hearts force in jets and is made a continuous stream by means of the elasticity of walls which have already been described. Then the blood is urged on by means of this elasticity into the capillary system and in this manner a succession of impulses or distensions are produced and this phenomenon is known as the arterial pulse.

Capillary Circulation:

The capillary blood vessels are minute anastomosing tubes which bring the blood into intimate

contact with the substance of the tissues. They are continuous with the terminal ramifications of the arteries on the one hand, and the commencing rootlets of the veins, on the other. They are composed of a single, transparent, homogeneous, somewhat elastic, tubular membrane. The physical conditions which influence the movement of the blood in the capillaries are the viscidity and the elasticity of their walls. For the capillaries contain a certain amount of elasticity notwithstanding the delicate texture of their walls

Venous Circulation

The veins which collect the blood from the tissues and return it to the heart are composed like the arteries of three coats an inner, middle, and exterior one. In structure they differ from the arteries in containing a much smaller quantity of muscular and elastic fibres. They are consequently less elastic and contractile: they are furthermore distinguished throughout the limbs, neck and external portions of the head and trunk by being provided

with valves, and so placed in the cavity of the vein as to allow the blood to pass readily from the periphery toward the heart and at the same time prevents its reflux in an opposite direction. The flow of blood through the veins is less powerful and regular than that through the arteries. It depends on the combined action of three different forces.
First - that of respiration.
Second that of muscular contraction of voluntary muscles.
And thirdly or lastly that of the vis-a-tergo

In concluding the venous circulation we arrive at the point from whence we started, that is where the venous blood entered the Auricle on the right side of the heart or the great forcing pump. It was not my intention to enter at all into the minutiae of these various circulations. but only to give its passage in the simplest manner and with as few words as possible. I have dwelt but slightly upon the anatomy of the heart and structure of the blood vessels, arteries capillaries and veins

but more particularly upon its course and the force by which it is sent from the centre to the periphery and thence back to the heart.

Thus by close attention not only have I been led as enlightened by our Southern friend up the stream and tide of knowledge by our illustrious Prof. of Physiology, but have also been guided by his instructions to traverse with him in all directions the route that the blood the great and grand life-preserver and restorer takes in making its circuit.

1871

AN

Inaugural Dissertation

ON

Sulphate of Quinia

Submitted to the Examination

OF THE

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DOCTOR OF MEDICINE,

By

Richard Henry Lewis

Of

North Carolina

Session of 1870 1871

Quiniae Sulphas

Of the three principal alkaloids derived from Cinchona bark, viz: Quinia, Cinchonia and Quinidia, Quinia is by far the most important and the one, in the form of its Sulphate, most generally used in practice. It is a whitish, flocculent substance, without odor, very bitter, and extremely fusible - is very slightly soluble in water, either hot or cold, but readily dissolves in hot alcohol or ether. It obtained in the following manner -

The Cinchona flava or Calisaya bark being richer in Quinia than any other variety, is coarsely powdered and boiled in dilute hydrochloric acid, by means of which a soluble muriate of Quinia is obtained. To this is added Lime, and as Muriatic acid has a stronger affinity for Lime than Quinia the latter is precipitated, but in company with impurities from (cinchonia &c)

which it is separated by being treated with boiling alcohol. The alcoholic solution is evaporated until a viscid mass is formed, which is Quinia. in a crude state it is true, but it is the form used in the preparation of the Sulphate, which is made by dissolving the crude Quinia in dilute Sulphuric acid, purifying with animal Charcoal, and crystallizing.

The Sulphate of Quinia, thus procured, occurs in the form of white, feathery crystals, which are inodorous, but possess an intensely bitter taste. It is somewhat more soluble in pure water than Quinia, and is entirely soluble in alcohol and acidulated Water.

Quinia was imperfectly discovered in 1803 by Duncan of Edinburgh, but the discovery was not perfected until as late as the year 1820. Since that time it has come into general use and now in almost

every case where Peruvian bark is indicated the Sulphate of Quinia is employed.

Effects upon the System. Administered in small doses it exerts a stimulant effect upon the circulation, increasing the frequency of the pulse, but when given in large doses its action is that of a sedative, to all appearances. Its effects upon the nervous system are evinced by a buzzing roaring sound in the ears, partial deafness, perhaps some obscurity of vision, and general confusion of thought. In Children an erythematous eruption, markedly like the eruption in Rubeola is occasionally produced by the exhibition of this drug. In my own case before I had arrived at the age of puberty, whenever I took Quinine I was covered with an eruption that itched intensely, and which was compared by those that saw it to the eruption in measles. Since that time it has not occurred, if I remem-

ber correctey, which makes us think that is peculiar to children. Upon the digestive system it exerts a most salutary influence when given in small quantity, by strengthening digestion and increasing the appetite. In some cases it produces nausea and vomiting, especially if it be administered in a large dose - it always has that effect upon me. As it is chiefly eliminated from the system by the kidneys the genito-urinary organs are apt to be irritated, and particularly is this the case, if they be the seat of disease, as for instance, Gonorrhoea. By some an emmenagogue action has been ascribed to it, but that the sulphate of Quinia has any such effect is by no means certain.

Poisonous Effects. If Quinine be taken in very large quantity it acts as a poison, the symptoms being blindness, deafness, probably paralysis, delirium, and coma, followed by death Frequently

Occasionally, tho' very rarely, symptoms of poisoning are produced by the usual dose. A case in point occurred in my own experience. A gentleman friend aged 20 years, became delirious from taking 20 grains of the Sulphate of Quinia at one dose. On the other hand, however, over a hundred grains have been taken in a few hours without any bad effects resulting.

Mode and Nature of its Action From the fact that Quinine can be readily detected in the urine a few hours after its ingestion, it is very evident that it is absorbed, and that it acts upon the system thro' the circulation. Upon the digestive organs it acts directly as a tonic, giving tone to the mucous membrane first as the other vegetable bitters do. And not only does it exercise a local tonic influence, but having passed into the circulation it acts as a general tonic, that is, as such

before when administered in small doses; for the character of its action depends upon the quantity taken. In regard to this matter Dr Stille says, that given in small doses the Sulphate of Quinia is purely tonic, in medium doses it is a tonic-stimulant, and that in large doses it acts as a sedative in diseases to which it is appropriate, especially when the morbid excitability is due to debility.

Circumstances modifying its Operation. The "functional disturbance" produced by it is much less marked in children than in adults, and in the aged it displays unusual activity. Sex also exerts an influence upon its action. Owing to the more delicate organization of woman, it is more ~~rapidly~~ actively absorbed than in men and consequently the same amount produces a greater effect upon them. Its action is favored by depletion and diminished by diffusible stimulants

But probably its operation is more modified by Opium than either or all of the preceding agencies; in fact the two drugs are to a certain extent antagonistic. Quinine causes the contraction of the capillaries and smaller vessels; whereas Opium causes their dilatation, and this antagonism has been turned to good account in Therapeutics. For instance, according to M. Briquet, when the sedative effect of Quinine is desired, a combination of the two drugs is very efficient, since the Opium antagonizes the cerebral excitement which is the primary effect of Q., and increases its sedative action which is secondary

Therapeutic Application. According to Dr Wood Quinia acts in four different ways: as a Tonic, as an Antiperiodic, as a Supersedent, and as a Sedative; and consequently it is applicable to as many different classes of disease. In the first place let us consider its employment as a Tonic

From the word tonic we immediately conclude that it is used in all those diseases in which debility is an important feature.

"In general debility" to quote from Dr Wood's excellent work on Therapeutics "it stands at the very head of the Tonics"; and in the debility of convalescence especially when it is the result of an acute febrile or inflammatory disease" its action is very beneficial. Its use in Scrofula and certain stages of Phthisis and Chronic Bronchitis is advantageous; also in the exhaustion resulting from Dropsy Suppuration, Colliquative Sweats &c; in the debility resulting from Gangrene; in Scurvy; and in fact, in every disease almost in which a tonic is indicated

In the second place let us consider it as an Antiperiodic. It is in the treatment of Periodical diseases that the power of Quinia is fully manifested.

indeed in this class of affections, especially those of a malarial origin, it is admitted to be a specific

Of all the diseases characterized by periodicity, by far the most common is Intermittent Fever, which although not very dangerous in itself, nevertheless leads to very disastrous results if allowed to continue unchecked. Now, it is in this very affection that the agent under consideration acts with the greatest promptness and efficiency - the instances in which it fails being very rare - and inasmuch as it is much more largely employed in the Treatment of "Chills" than probably all other diseases put together, certainly than any other two, a somewhat minute investigation into its application in this particular malady will not be out of place.

Several years ago a preparatory treatment of depletion and purgation was considered necessary before

administering the Quinine; but greater experience and more enlightened views have established, that in an immense majority of cases the preparatory treatment is not only unnecessary, but positively hurtful; since it delays, proportionally to the amount of depletion, the recovery of the patient; so that at the present day it is not employed at all by the more advanced portion of the profession, that is. It is true that if constipation exist a purgative is indicated, but it is not at all necessary, as it was once thought, to wait for it to act before giving the Quinine

The quantity required to arrest the paroxysms of intermittent fever is (in North Carolina at least) from fifteen to twenty grains; but Dr Stille' observes in regard to this matter, that "experience has shown that the disease can be abruptly arrested by a single dose of from five to eight grains."

that quantity may be, and I have no doubt it, sufficient in Philadelphia; but I am fully convinced that in our Southern climate where the malaria is of a more virulent type character so small a quantity would prove totally inefficient In simple Intermittent different trains is nearly always sufficient to interrupt the paroxysms, but they are liable to return, and hence to effect a permanent cure it is necessary to give Quinine either in tonic doses (5 or 6 gr) every day, or a full dose every seventh day for a month. Some chalybeate should be combined with it.

In regard to the time of administration there is considerable diversity of opinion. It was formerly thought that the proper time to give the medicine was just before a paroxysm, so that it might have time to effect its peculiar action before the occurrence of the next; but Experience has

shown that a sufficient time for it to act is allowed after the paroxysm, and as given just before an attack it is apt to increase its violence this view has been abandoned. Some are of the opinion that the full quantity required should be administered in one or at most two doses very soon after the cold stage of the paroxysm has passed off, and in this category most of the best authorities are to be classed. Others, and among them Dr Wood, "prefer", to quote again from his excellent work, "the exhibition of the sulphate of quinia in small doses, repeated at intervals of an hour or two to the use of the full quantity required for a single intermission in one or a very few doses" but commencing immediately after the paroxysm. He thinks that given in this way it will prove less irritating to the stomach, but in my own case quinine taken in two doses proved less irritating, at least the irritation did not continue

as long, as when it was taken according to Dr Woods method.

In Pernicious Intermittent Fever is the same disease as the preceding, only of a more malignant Type, the Sulphate of Quinine is likewise indicated in it, only in much larger doses on account of the greater severity of the disease.

In Remittent Fever, which is periodical in its character being marked by exacerbations and remissions in the fever, and of malarial origin it is employed with great advantage in the dose of from 15-20 grs in the remission. Enlargement of the Spleen and Dropsy when appearing as sequelae of malarial fever are usually much benefited by Quinine.

In malarial districts diseases which are not periodical in their nature, as for example Pneumonia, sometimes take on the intermittent or remittent type, and whenever they do Quinine is indicated.

In regard to the mode of action of Quinia in the cure of Remittent Miasmatic diseases, several theories have been advanced, neither one of which explains its mode of action satisfactorily. The theory most generally accepted by the profession according to Dr Miller, is that the essential cause of Remittent fever is a Material agent, a kind of ferment, which Quinia or Bark neutralizes or eliminates from the system probably by what Dr Wood calls its supersedent action, by which he means that it substitutes a peculiar action of its own which supersedes or takes the place of that of the disease, in that way removing it from the system - pushing it out.

The most recent theory, however, and that which bids fair to explain the phenomena more satisfactorily than any other hitherto brought forward, is that of Dr Bence Jones. He has discovered in the tissues of the body a substance that is to all appearances identical

with Quinia - it exhibits the same fluorescence in solution, and responds to all the other tests. Now if his observations be correct, and if such a substance as he represents really exist in the body, a very beautiful and at the same time satisfactory explanation of the mode of action of Quinia is readily arrived at, viz; of course, that the disease is caused by a want of this substance, and that the Sulphate of Quinia supplies it. The question is still sub judice and there are many arguments that could be advanced both pro. and con. but a want of space forbids our entering into any further discussion of it.

Not only is Quinia beneficial in periodical diseases of a miasmatic origin, but it is eminently so in certain intermittent diseases that can be traced to no such cause, and chief among these is Neuralgia which is essentially paroxysmal in its nature. In the treatment of this affection it should be given in large doses

In functional diseases of the nervous system when they exhibit a tendency to periodicity its exhibition is often followed by good results. Tetanus is also said to have been cured by the administration of quinine. Lastly, as a derivative it is employed in the treatment of a good many diseases.

In Yellow Fever it has been employed as a febrifuge, and in mild cases it will relieve the febrile disturbance, but it will not cure the disease, and in many cases it is thought to aggravate the symptoms. There is very high authority on both sides, and the advisability of giving quinine in this disease is not determined.

The old idea that quinia given in large doses was beneficial in Typhoid fever has been exploded, and it is now settled, I believe, that it is only beneficial in this disease when administered in tonic doses. In Typhus, as in Typhoid fever, it should be given with the same object in view

namely to obtain its tonic effect. In regard to its employment in large doses the authority is divided. The administration of Quinia in Acute Rheumatism is often found advantageous, especially in scrofulous subjects, and in those cases in which general debility is manifested. If the patient be robust, he should be subjected to a preparatory treatment, by evacuants and probably blood-letting. In this disease Bark is considered preferable to Quinia. (In the above remarks Quinia & Quinine for the sake of convenience have been frequently used for the Sulphate).

Mode of Administration. It is given both internally and externally. Internally it is administered by the mouth in the form of pill or in solution, and per rectum, in solution of Starch. There are two methods of giving

it externally, the endermic and the hypodermic. When administered endermically the epidermis is removed by a blister and the sulphate dissolved with powdered gum is sprinkled upon the denuded cutis. The hypodermic method consists in injecting a solution under the skin by means of the hypodermic syringe. It is almost always given internally unless in cases of emergency and usually in pill on account of the extremely bitter taste of the solution. As acidulated water is necessary for the solution of the sulphate of Q., the hypodermic injection of it is not more frequently resorted to; since the irritant property of the acid is liable to produce an abscess.

The valuable assistance in the preparation of this essay received from the admirable works of Drs Stille & Wood I acknowledge with gratitude.

Respectfully submitted by Richd. V. Lewis.

AN

Inaugural Dissertation

ON

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Submitted to the Examination

OF THE

Provost, Regents and Faculty

OF

PHYSIC,

OF THE

UNIVERSITY OF MARYLAND,

FOR THE DEGREE OF

DOCTOR OF MEDICINE,

By

Of

Session of 1870-71

[illegible]

[illegible] [illegible] [illegible] [illegible]

[illegible] [illegible] [illegible] [illegible] catalytic agent. It is obtained from the livers of the Gadus Morrhua [illegible] in the common Cod fish, and an inhabitant of North Europe and America, and is also prepared from others of the Cod fish genus [illegible] [illegible] of the Atlantic [illegible]. The oil is prepared in several different modes. One is by [illegible] the livers in the sun and [illegible] off the oil as it rises. The other mode is by boiling the liv[illegible]

in mass and straining off the oil. The third I think to be the most preferable is obtained by placing the livers in a metallic cylinder provided with stopcocks three in number situated one above the other the whole to be surrounded by steam not exceeding one hundred and eighty degrees Fah. That which escapes from the highest stopcock is the most pure and therefore the best as it does not contain so much animal matter as that which escapes from the lower ones and is a lighter color and does not so readily undergo putrefaction. The livers should be collected daily so as not to undergo

decomposition, if so allowed the oil is less liable to agree with [illegible] patient.

There are several varieties known in the market, the brownish yellow the dark brown and the [illegible] is of a dark brown color opaque in mass and transparent in thin layers. Some authors think there is [illegible] livers recently collected is far preferable to that which has been [illegible]

allowed to undergo decomposition.
lamp oil or fish oil. It also has a
characteristic taste and odor which
distinguishes it from other oils.
Its taste and odor is similar to
that noticeable in the fish oil than
in the darker varieties. The taste

proportion [illegible] the different [illegible]
It may be taken in ordinary doses
for some time without showing
any appreciable effect on the system.
But in a course of [illegible] the [illegible]
begins to fatten increases in weight
with an apparent exaltation of
the functions of the body generally
and [illegible] the [illegible]
corpuscles of the [illegible]
It is easily digested and absorbed.
It like [illegible] fully [illegible]
to keep up animal heat. But if
given in very large doses has a
tendency to produce a [illegible]
condition of the [illegible] may [illegible]
[illegible] or [illegible] may

increase the menstrual flow. When
[illegible]
[illegible]
the patient. It is given in all cases
where there is Spanaemia debility
or emaciation. After Cod liver
[illegible]
[illegible]
[illegible]
[illegible]
[illegible] better and has a more
healthy appearance [illegible] pulse
[illegible] stronger and in every
respect much better. All of these
[illegible]
[illegible] effects on the system; but
if [illegible] to too great an extent it

guarded against-

by some writers on the subject-that it acts only as a nutrient-and only differs from other articles of

but there can be no question

the tissues of the human body and

such happy effects

[illegible]
taking cod liver oil and weighing
after he has taken it for a length
of time will find that he has
increased in weight to a far greater
extent than the amount of cod
liver oil he has taken. It has been
found that cod liver oil can be
taken to a much greater extent than
other oils. Hydrocarbons have been
found to have been eliminated
after twelve days. Whereas if cod
liver oil is properly administered
it may be taken for a very long
time without elimination from
the body. Use patients ~~[illegible]~~
~~[illegible]~~ quite an affection for it.

may
acquire

The dose to be given [illegible]
a [illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
to be taken [illegible] [illegible]
during the day. It is [illegible]
to give it [illegible] to [illegible]
the [illegible] [illegible]
wine or whiskey. [illegible]
[illegible] take the oil [illegible]
day owing to the [illegible]
vomiting it [illegible] but take it
without manifesting any such
symptoms on going to bed.

While others cannot take it without the administration of some aromatic such as creosote to counteract the [illegible] produced by its administration.

Cod liver oil

is one of the most valuable remedies that the profession [illegible] It has been used for [illegible] years [illegible] years [illegible] before it became known to any great extent among the profession. [illegible] first known to the profession at large in the year [illegible] efficacy [illegible] but was very little used by them until the year [illegible]

After [illegible] it [illegible]
became more and more used until
the present day and is now used
[illegible]
medicine. It is mostly used in
[illegible]
Phthisis and Scrofula. It is used
[illegible]
the [illegible]
vent discharges in those tumors
[illegible]
[illegible]
charges from the nose and ears.
It [illegible]
when [illegible] in large quantities. The
[illegible]
for the [illegible]

obstinate inflammation which has a tendency to alter-[illegible] a suppuration. It may prevent the advance of emphysema. It may be also used in chronic [illegible]. In cutaneous eruptions where there is a scrofulous taint in the system it is used sometimes with markedly good effects especially in the eczematous and impetiginous eruptions. Also used in Tabes mesenterica when there is great distension of the abdomen sometimes associated with peritoneal effusion and an enlarged liver where there is much emaciation and debility with anaemia. It is also used in

Chronic diseases of the bronchial glands. Is used in all cases where there is a chronic inflammation of the alimentary or respiratory canals when scrofula is suspected. Used in inflammation of the serous tissues where scrofula is thought to exist in the patient. Indeed cod liver oil is used whenever there is a depraved condition of the system with debility and emaciation or in other words where there is a retrograde metamorphosis of the system.

By
C. A. Baldwin

Maryland

AN

Inaugural Dissertation

ON

Erysipelas

Submitted to the Examination

OF THE

Provost, Regents and Faculty

OF

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OF THE

UNIVERSITY OF MARYLAND,

FOR THE DEGREE OF

DOCTOR OF MEDICINE,

By

[illegible]

Of

[illegible] Maryland.

Session of 1907.

Erysipelas.

This disease has been divided into a number of varieties, by different authors, the common [illegible] into the Traumatic and Idiopathic, which [illegible].

Causes.

The most frequent cause is a wound, but the disease occurs in some instances without any perceptible cause, [illegible] times brought on by exposure to cold, confinement of a person to hard work or study, who has been used to live a great deal in the open air, uncleanliness, intemperance, crowded and dirty apartments together with faulty nutrition, anything that tends to break down the [illegible]

[illegible]

which is very characteristic to the disease, generally on the face, [illegible] or tip of the ear, commencing [illegible] elevated, which disappears on pressure but soon returns when the pressure is removed. This spreads [illegible] the surface, [illegible] gin, this may be in some cases ser- [illegible] skined [illegible].

The symtoms are mostly [illegible] in all [illegible]

[illegible] gone there. The eruption also changes, it becomes hard there, the redness changes to a purple hue. The pain is very much greater, and is of a pricking, burning character.

Course.

The eruption spreads in all directions, continuing for three or four days and sometimes longer. When on the face and sometimes it is confined exclusively to the face which is so much swollen that every feature is obliterated, the eyes are closed, the nostrils are also closed in some cases, so that the patient

cannot breath through them. the [illegible] is impaired. The disease always has a tendency to the scalp, and when this is affected it is puffy. [illegible] a very much swollen pitting on pressure, [illegible] is [illegible], the brain is very apt to become affected when it invades the scalp, and it then becomes very dangerous.

When in other parts of the body it takes the same course as on the face. Sometimes there is an effect of a serous kind, especially when there is much [illegible], this appears on the surface [illegible]

When the disease becomes gangrenous it does great damage to the tissues, and ends very often fatally, if the patient survives an attack of this sort, the convalescence is very protracted, the fever is of an asthenic type, with quick feeble pulse, brown tongue, with delirium of a low mutterings kind, this variety generally arises from wounds penetrating deeply into the fascia, lacerated wounds are more apt to be followed by this variety, than clean incisions of the knife.

When the brain is affected there may be restlessness or [illegible]

rineas, dry brown tongue, powder accumulate on the lips and teeth, with delirium which mostly end in coma. The inflammation reaches the brain through the small foramina of the skull, or may extend up the nose and penetrate through the ethmoidal cells.

Diagnosis

This is impossible before the eruption, but after the eruption it is easy. It is to be distinguished from the exanthemata. The eruption of erysipelas commences in one spot and spreads with a well marked margin and limited extent.

a purgative a single dose of Hydrarg Chloride Mite, to be followed by a saline aperient during the progress of the disease the bowels must be kept open by saline aperients.

The Tinct Ferri Chloridi should be given in doses of fifteen or twenty drops every three or four hours, water. This has come largely into use in the last few years, and it seems to have a specific virtue in this disease, this treatment will suffice in mild cases. But if the patient is old and feeble some stimulant will be required, brandy in teaspoonful doses or Carbonate of Ammonia

[illegible] grain doses with a decoction of bark will be of great benefit.

Local Treatment

Warm fomentations may be applied on flannel or sponge; saline astringent applications are recommended by some. A line of iodine or nitrate of silver was always drawn around the inflamed surface to prevent it from spreading, but as this is generally useless it is going out of practice. A very good application is to cover the part over with flax-seed meal, or to grease the part over with glycerine. [illegible] hard, the pain and smarting of the part will be greatly relieved by the

application of some of the above named remedies. In the treatment of the phlegmonous variety, a stimulating course of treatment needed from the first, all depressing measures must be avoided, stimulants and tonics together with nourishing diet must be given from the first also.

The part affected must be kept elevated, and hot fomentations to the part, and if there is much swelling tension and pain incisions may be made in the part, this affords great relief, and makes an outlet for the blood and serum, after the incisions have been made keep the part

well pointed.

The patient will be in a feeble condition for sometime after an attack of this kind, and he should have change of air, nourishing diet and [illegible] [illegible] attention [illegible] of life.

I now close the subject of my Thesis hoping that it will meet the approbation of the Faculty as I have tried to express my views as clearly and as much in my own language as possible.

Respectfully yours

[illegible]

AN

Inaugural Dissertation

ON

[illegible]

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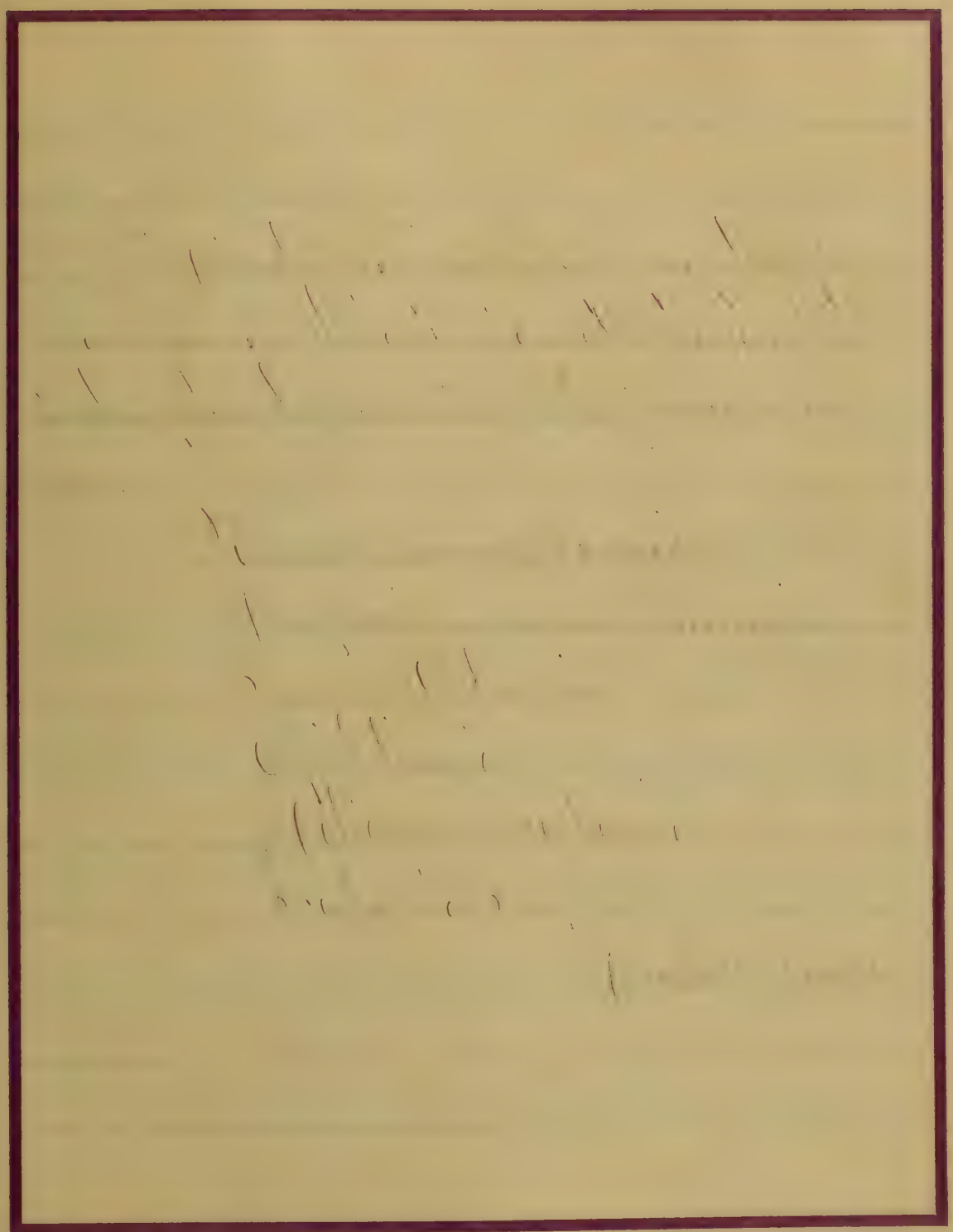
By

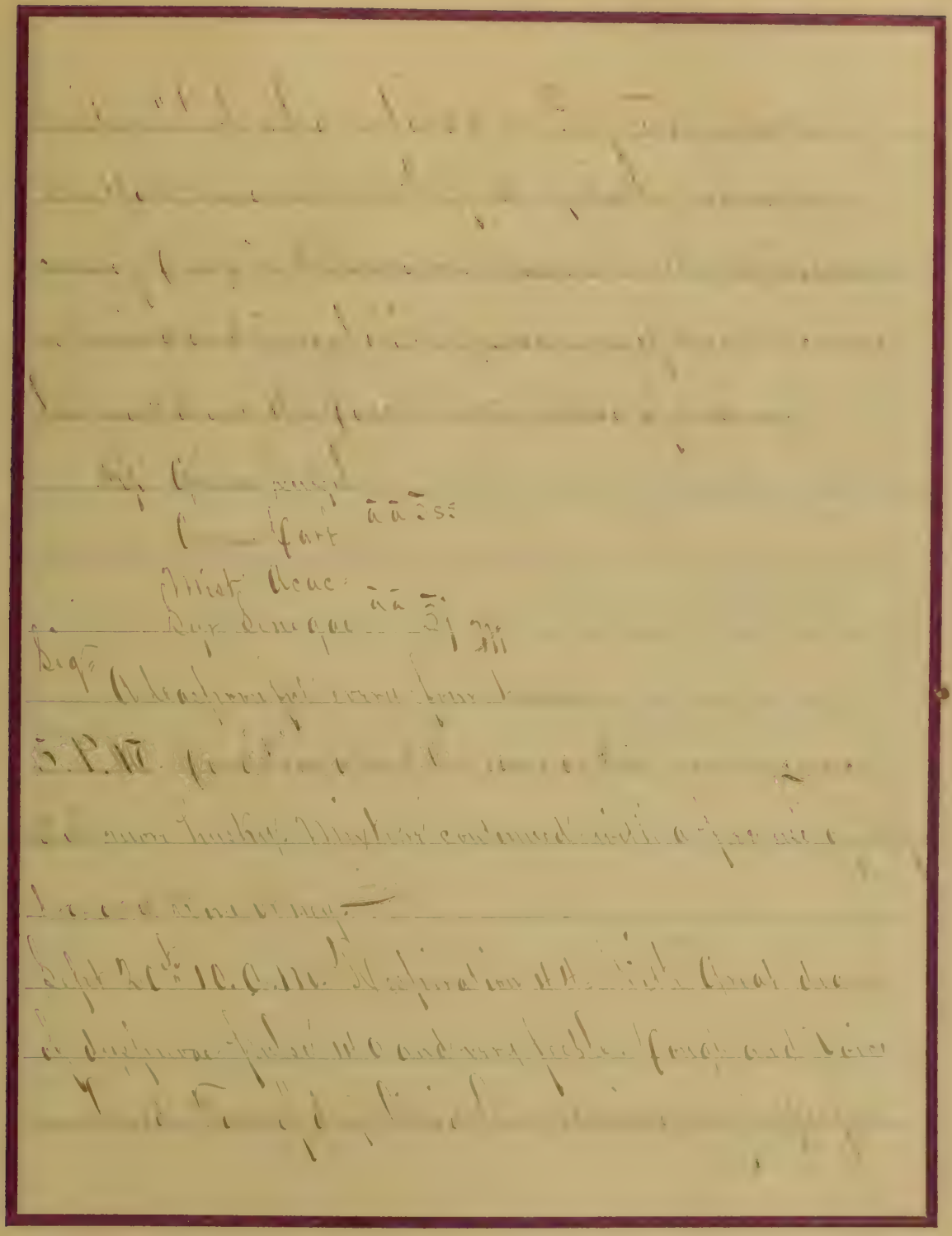
[illegible]

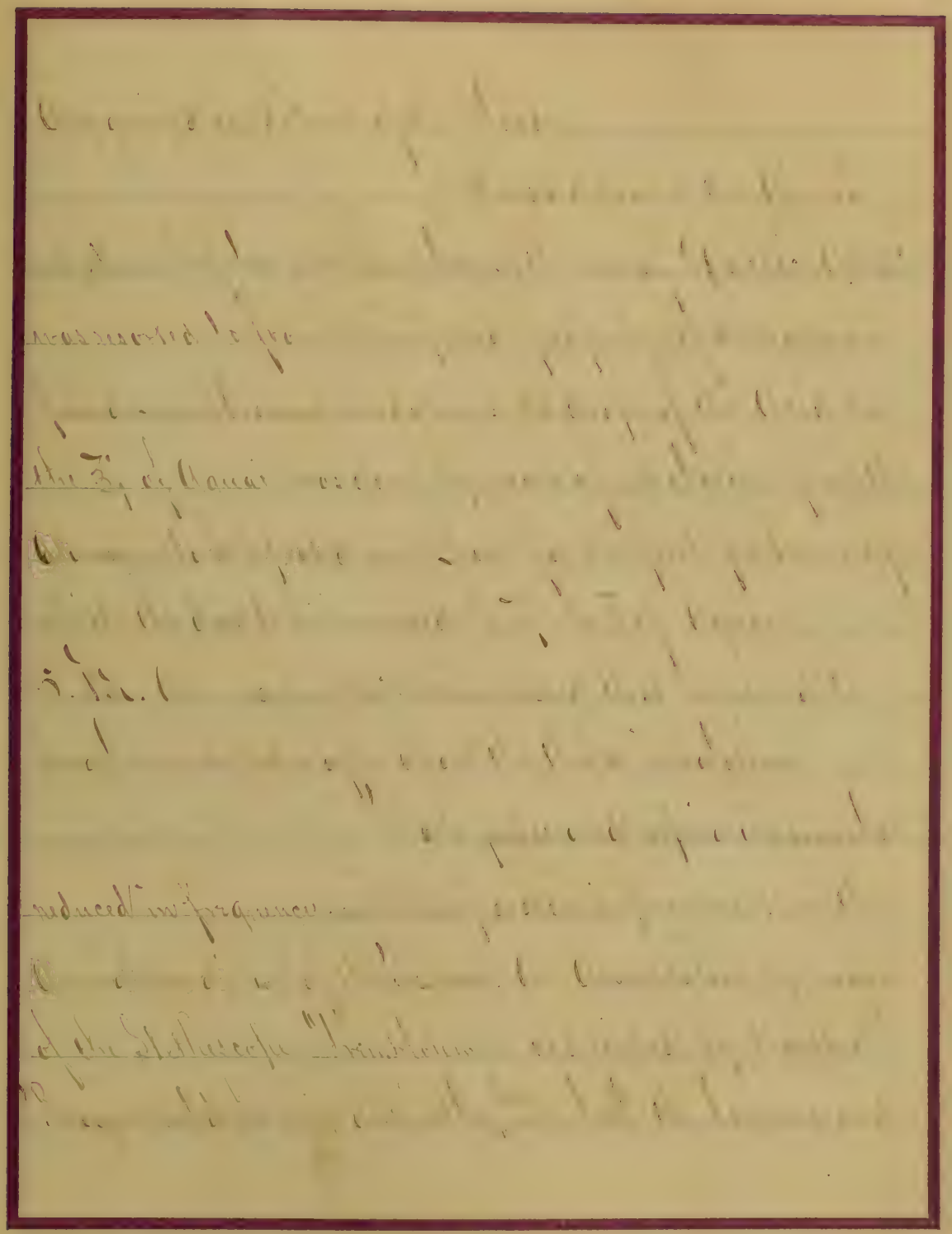
Of

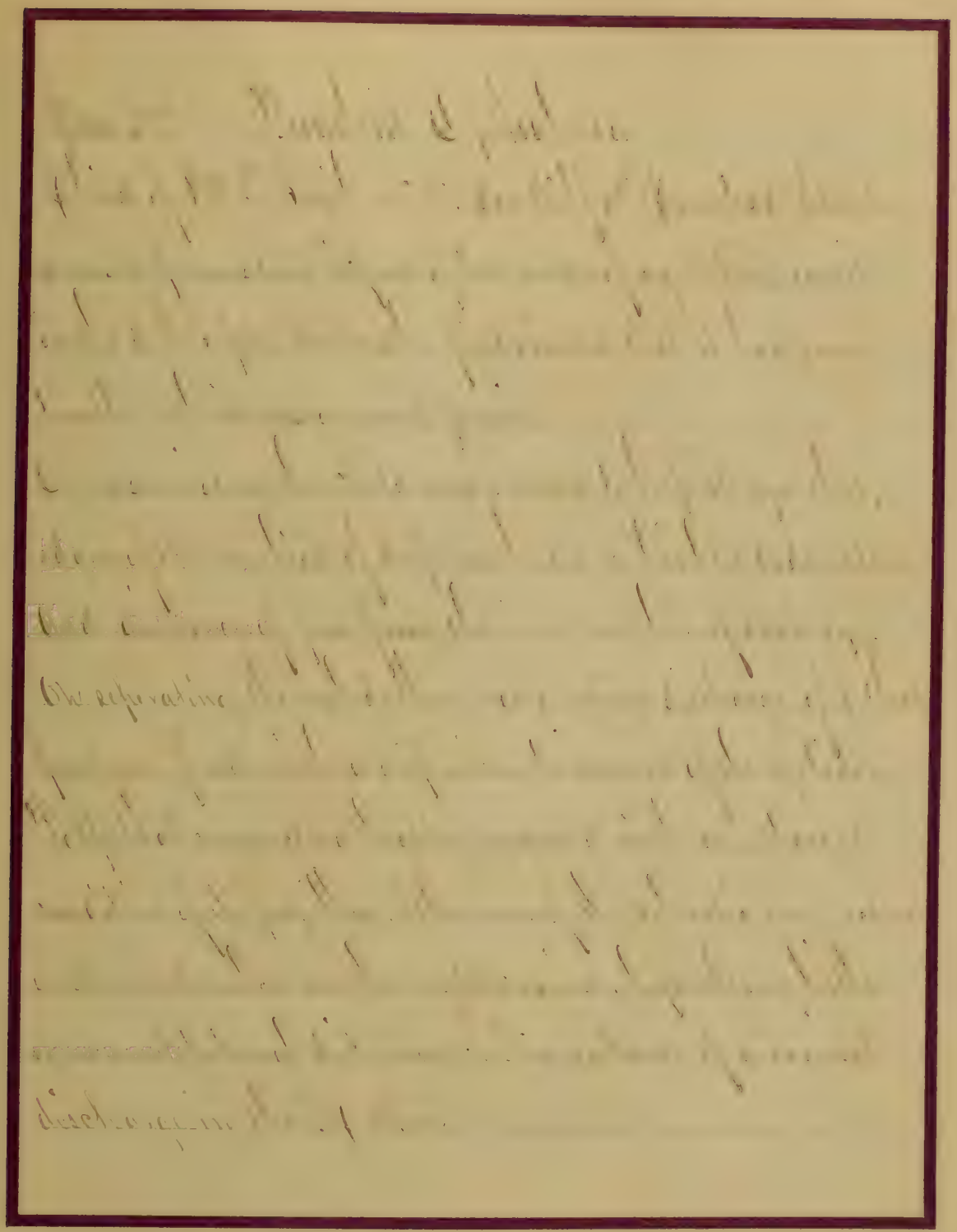
[illegible]

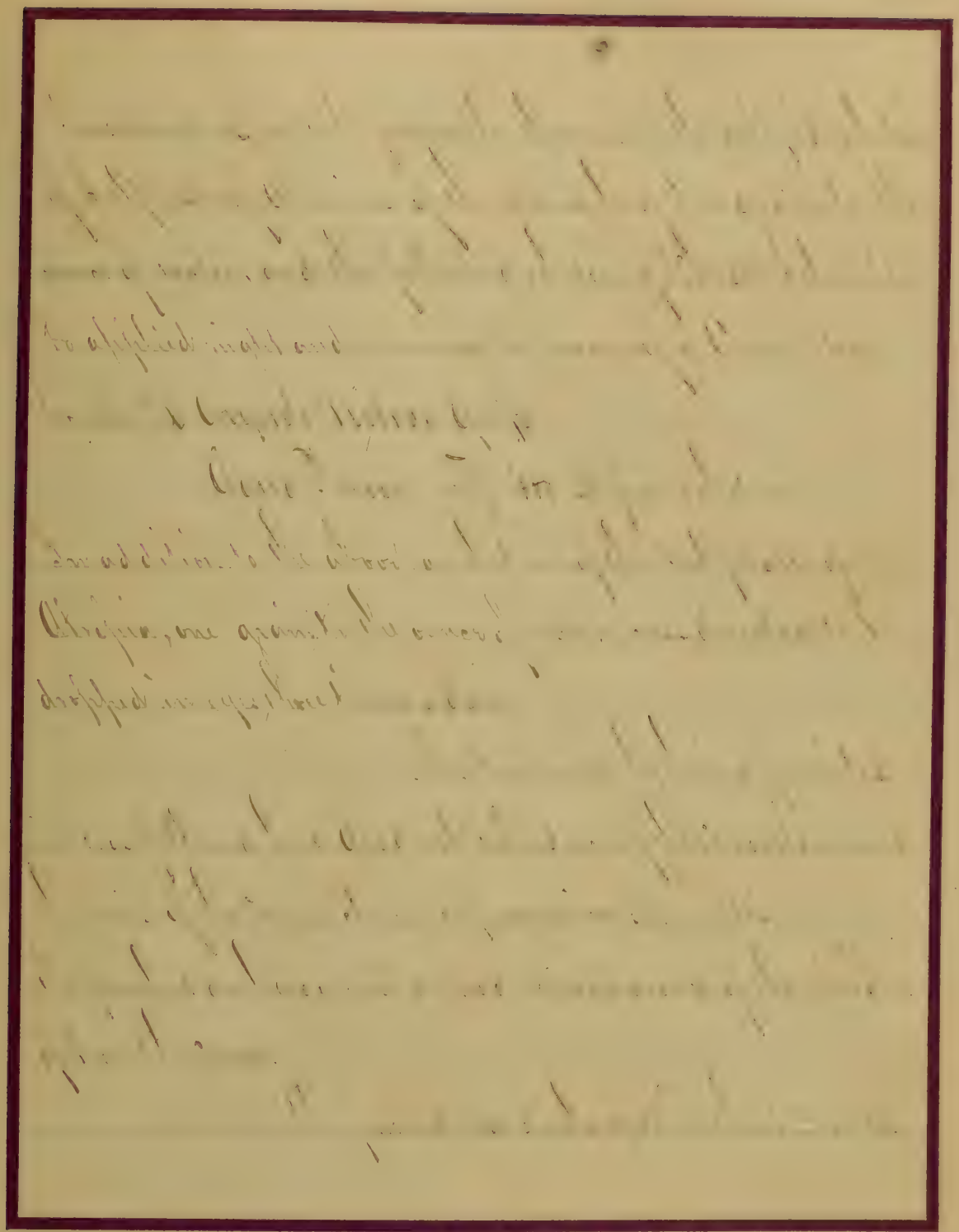
Session of [illegible]

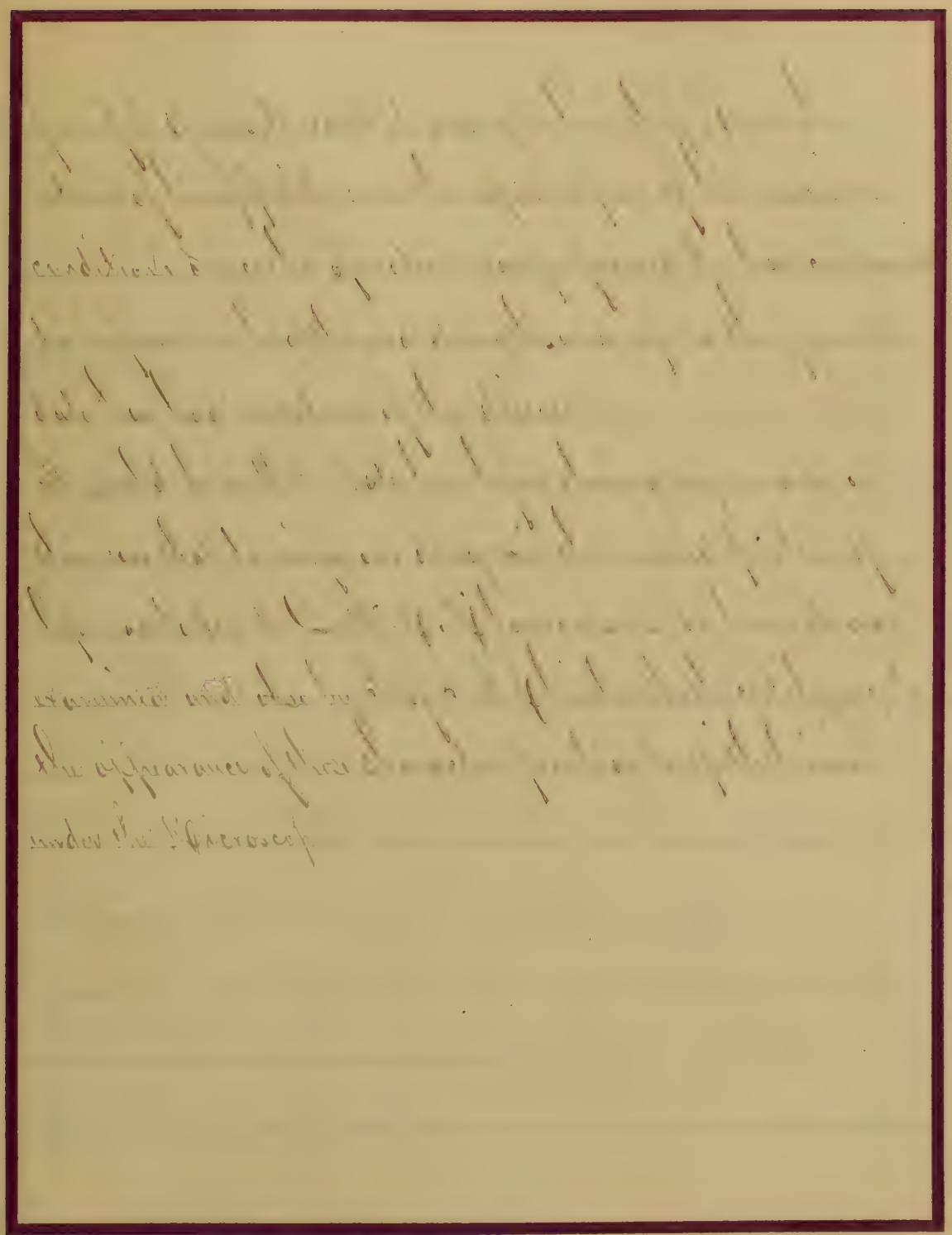


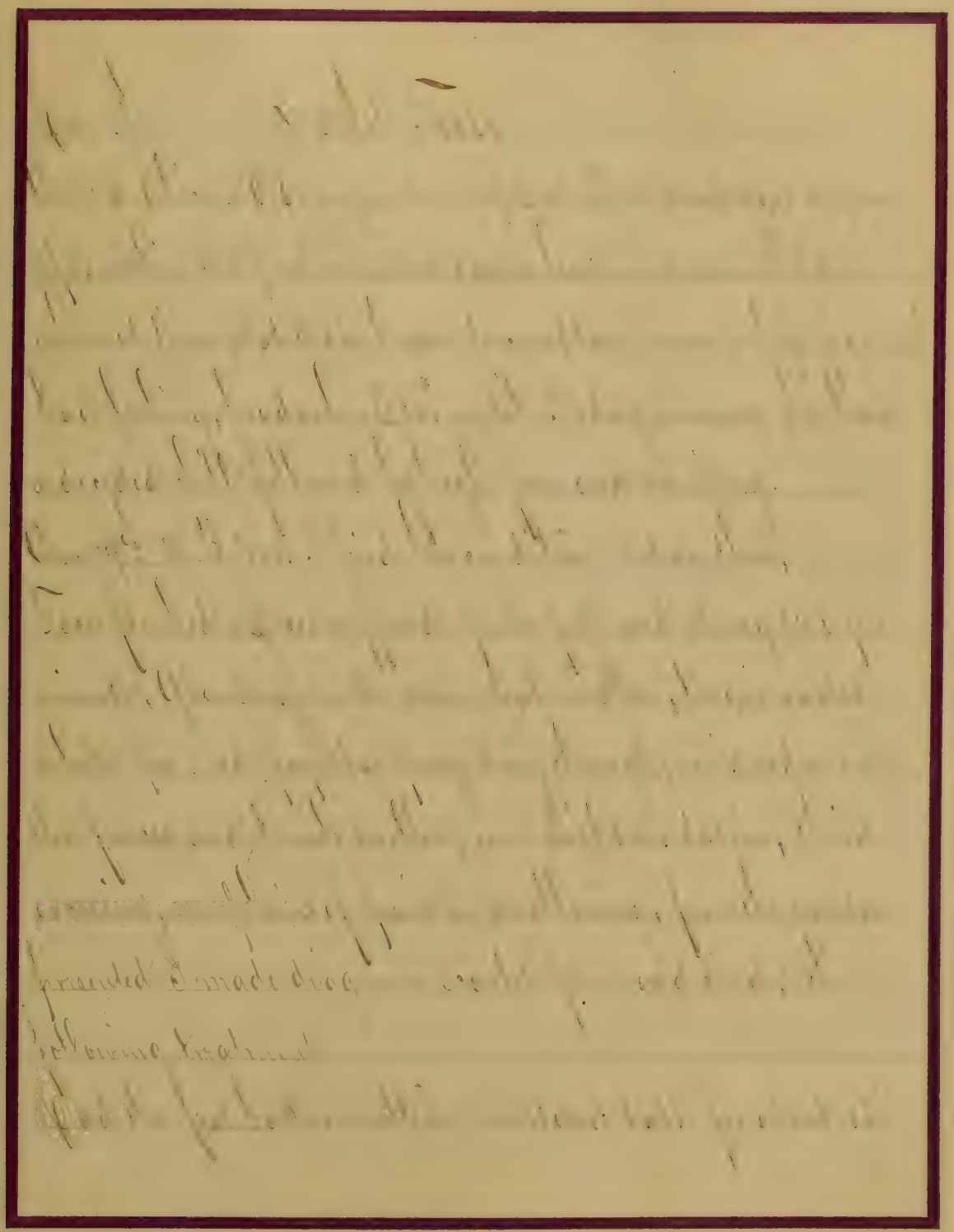


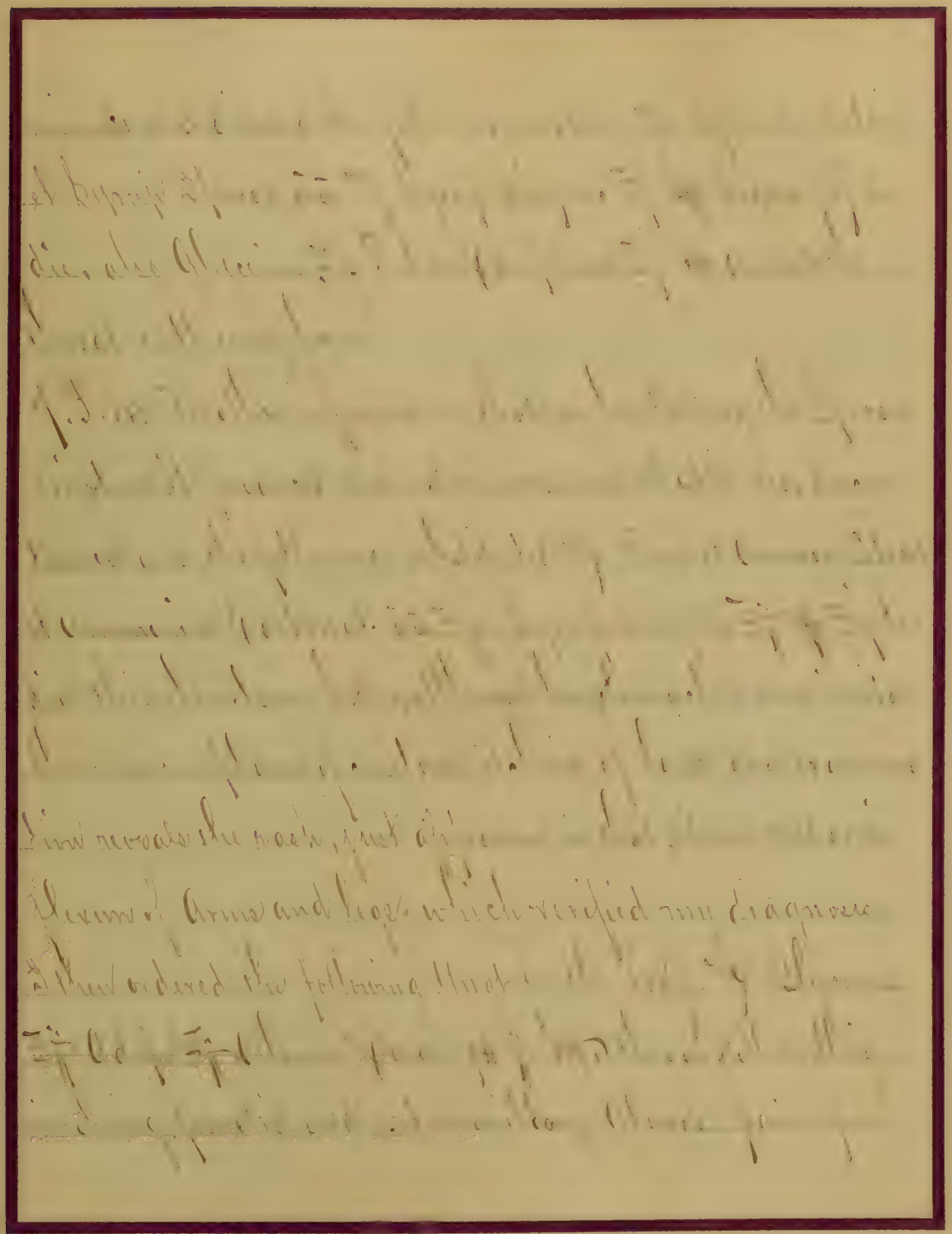


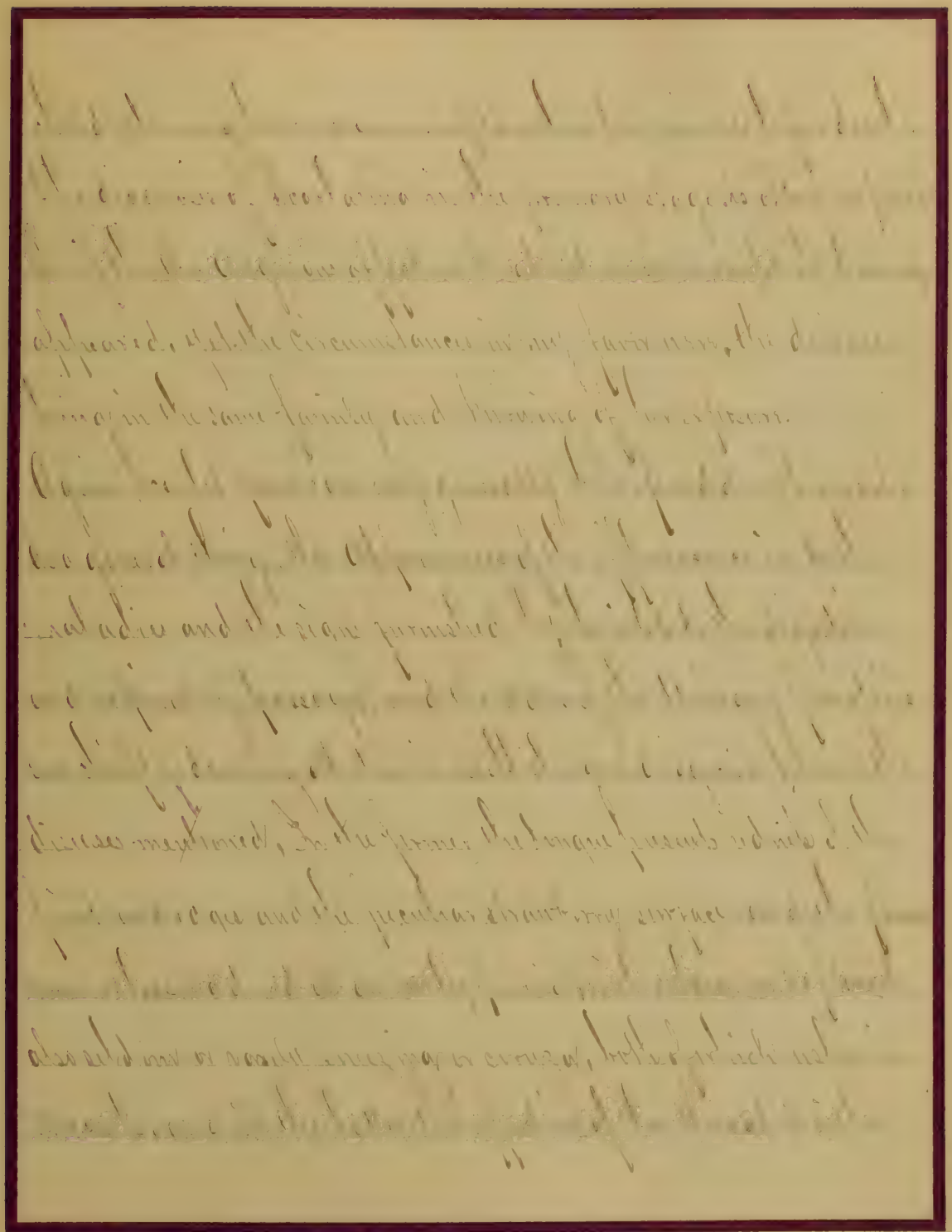












AN

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ON

[illegible]

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DOCTOR OF MEDICINE,

By

[illegible]

Of

[illegible]

Session of [illegible] 18[illegible]

the appearance of the urine is the result of the secondary symptoms [illegible], for in those to a similar [illegible] previous that mercurial has not been given which some [illegible] may retard but not prohibit [illegible] appearance.

Contagion of general syphilis.

Some of the general symptoms are contagious as mucous condylomata also the blood as has been proven by [illegible]. and it is an established fact that the [illegible] of the syphilitic father are imparted in [illegible] in the [illegible] of a healthy mother, and the [illegible] [illegible]

any way in which it may be obtained while chancroid is derived from one of its own kind, chancre is generally [illegible], while chancroid is [illegible] the appearance is different in most respects, chancre is a superficial [illegible] involving the whole thickness of the skin or mucous membrane, chancroid is [illegible] perforating the whole skin or mucous tissue, chancre is indurated and can be [illegible] in the tissue beneath it [illegible] away in the tissue, the edges of the chancre are raised while that of the chancroid is ragged.

patient as speedily, surely and agreeably as possible. In order to do this we must in the first place be particular in regard to the Hygiene of our patient, so that he or she breathes a healthy and pure atmosphere, and he clothed comfortably, have good nourishing diet be regular in their habits, keep a loof from all excesses of intulgencies, take plenty of exercise, and abstain from the uses of depressing narcotics.

In the early periods of Syphilis we should not neglect to give tonics as they constitute an important part of the treatment unless the system is too plethoric to

Pendleton, Eugene
Va 1871 †

Thesis
on
Iodine

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Iodine

Iodine derives its name from the characteristic vapor which it exhales when volatilized. It is very largely diffused in nature, being found in certain mineral springs, and sea plants, and less abundantly in, coal oil, cod fish, and sea water. It is manufactured principally from the Kelp of sea weeds.

Effects on the System. The effects of Iodine vary with the dose concentration, and preparation. When given in small doses its is tonic, and alterative. Under its use the apetite improves, and there is often a marked increase in strength, and flesh. But if given in very large doses, Iodine acts, as an irritant, producing, quick pulse, hot skin, fired tongue,

, and often vomiting, and purging.

Iodine is said to increase all of the secretions of the body; but this I do not consider a settled question, for, as in the case of mercury, we have no direct means of ascertaining, whether the bile is increased, or decreased, yet I think we are justified, in saying that it increases most of the secretions, and excretions.

Iodine sometimes produces pustular eruptions, and coryza. Some persons, from idiosyncrasy, are unable to take it, even in very small doses, without the most annoying consequences.

Cases are on record, in which Iodine appeared to produce atrophy of the mammae, and testicles. That it dose-

Exert a special tendency to produce eruptions. These Statements, is by no means a settled question. Numerous Physicians, who give it daily have never met with a single Example. Many Cases are reported in which Iodine produced, Ptyalism, but most authors attribute this to the elimination of mercury from the System.

When applied to the Skin, Iodine produces a dark yellow Stain; but if a concentrated Solution be used, with friction, it will soon detach the Epidermis, in patches.

Modus Operandi. The alterative action of Iodine, can be best explained by supposing it a Stimulant, to the nutritive function. Under its action, waste,

, and repair are carried on rapidly, and hence the rapid emaciation, when the digestive function is interfered with, and repair, is not carried on, in proportion to waste. With this view of its modus operandi, may be explained the rapid disappearance of chronic swellings, while under its influence. The vitality of such structures, being much lower than that of the surrounding tissue, waste is carried on more rapidly, until they reach their normal size, and state of vitality.

Therapeutic Application. To Dr. Coindet, of Geneva, Switzerland, is due the credit of discovering, perhaps the most valuable therapeutic application of Iodine. Having

observed much benefit derived from the use of Burnt Sponge, in cases of Goitre, and being aware that Sponge contained Iodine, he was led to attribute its value to the Iodine. On substituting Iodine for Sponge the suspicion soon became a reality. From this others were induced to use it, until it became generally known to the medical profession. When first discovered, like all new medicines, it was thought to be the panacea, for all diseases, but after a fair trial, it has doubtless been reduced to those over which it really acts beneficially.

As already intimated, Iodine acts

like a charm, in cases of of Simple Goitre. The thyroid gland may be the seat of other disease, as Carcinoma, over which Iodine, exerts little, or no influence.

In Scrofula, Iodine, often acts, as well as in Goitre. Indeed we may say it acts with more or less benefit, in all Scrofulous diseases. Enlarged Lymphatic glands, are often rapidly subdued by the internal, and external use of Iodine. The external, and internal use of Iodine, in Scrofulous Ulcers, is of great Service.

Cases are reported in which it appears to have effected a cure, in Tuberculin

meningitis, but these cases are so few, that we are led to believe that a false diagnosis was made in those claimed to have been cured.

In Phthisis, so far as concerns its cure, or prevention, I believe Iodine utterly worthless, but if given in combination with, cod liver oil, iron, and out of door exercise, it may assist to improve the general health, and thus prolong the life of the patient.

In chronic enlargement of the mammae, testicles, spleen, liver, and tonsils. Iodine acts with more, or less benefit. The Tincture of Iodine should be applied externally, and Iodide of Potassium, given internally, when practicable

In the Secondary, but more especially in the tertiary stage of Syphilis Iodine acts equally, as well, as mercury. In the tertiary stage, when mercury seems no longer to exert its beneficial influence, Iodine, may be substituted, with the most happy results. It is to this stage of Syphilis, that its use should be almost exclusively, confined. In Opacities, and Ulceration, of the Cornea, especially when arising in Syphilitic subjects, Iodine proves highly beneficial. In Syphilitic Gummata, & nodes the best local treatment, consists in painting the affected part once, or twice daily,

with the, Tincture of Iodine.
In Syphilitic Tubes, Iodine is considered, only secondary, if not equal, in Efficacy to Mercury.
In indolent Bubo, the application, two, or three times daily, of the, Tincture of Iodine, generally excites speedy suppuration.
In Chronic Skin diseases, though not so efficacious, as arsenic, or mercury, yet Iodine often acts well. It may be given, as a bath, lotion, or ointment, according to circumstances. An ointment of the Iodide of Sulpher, often gives the very best results.

Iodine is thought by some to useful in the treatment of Pseudomembranous laryngitis, and diphtheria. The theory is that it has an antiplastic effect upon the blood, and hence should be given whenever there is tendency to the formation of false membrane. But judging from the benefit, derived from its use in ulcers, which have just the opposite tendency, we are led to abandon it in the treatment of fibrinous exudation.

The Ectodic treatment of Varilla with Iodine, is thought very highly of, by some. The Tinctura should be applied, once, or twice daily, by means of

a brush, while the eruption is papular.
In Erysipelas, brane is claimed to be a useful application. It was first recommended in this affection, by Dr. Davies, who directs the Tincture of Iodine to be applied to the inflamed parts two, or three times during the day.
Iodine has been injected, into various cavities, with sometimes a permanent cure. Hydrocephalus, Hydropericardilis, Cranium dropsy, and dropsy of the joints, are all claimed to have been cured by this means

In Gout, Iodine may be applied locally, and given internally, with advantage. It appears to act best when there is in the same subject, a Scrofulous diathesis. Iodine is sometimes used, as subsacient, in Laryngitis, Phlebitis, and Bronchitis. Snake bites, and other Poisoned wounds, are stated, by Prof. Brainard, to have been Successfully treated, by injections of Iodine. He injects the tissues immediately surrounding the wound, as follows. A ligature is placed over the wound, & a trocar passed under the skin, and edge of the clasp, through the cannula of which a Solution of Iodine, and Iodide of Potassium is injected.

Enemata of Iodine, have been used with abhorant success, in Chronic dysentery, and diarrhoea.

In cases of poisoning by Iodine, if it has been recently taken, an emetic should be given, & the Stomach pump used. At the same time starch should be freely given, and an Opiate to allay irritability.

Iodine, should not be given with a mineral Strychnia, as it forms insoluable Compounds with these alkaloids.

The best preparation of Iodine, for internal use, is the Iodide of Potassium

For topical use the Tincture, & Compound Tincture, are the best preparations

Eugene Pendleton

Buckeye Virginia

AN

Inaugural Dissertation

ON

Inflammation.

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Inflammation.

These are the general constituents of Inflammation if they do not exist in all cases. Still the greater number are usually present.

Sometimes one is absent, sometimes another, but Redness is always present & sometimes exists without any of the other symptoms, & this often gives rise to difference of opinion.

Frequently Inflammation will exist without any perceptible swelling.

We must conceive the part to be a little increased in size, because there is more blood than natural; but without a sufficient enlargement to justify us in the word swelling there may not be much increase of heat.

and pain may be wanting and it is to be remembered that both the increase of temperature & the redness by which we understand a morbid degree of them may arise from other circumstances than Inflammation; as may also the swelling and pain.

Redness is indispensable to Inflammation it is not every redness that we have a right to call Inflammation. A certain degree of it, is necessary to the idea of Inflammation. How much cannot be specified, but it is an experience to be learned. The requisite intensity will vary in different parts, according to their natural colour. A blush, or momentary posiness, is not considered & Inflammation

and every part is liable to this momentarily in health especially the cheeks. Though if we see in the cheeks a great redness, we should not hesitate to call it Inflammation. If we found the part were morbidly sensible or if the patient complained of its smarting + being painful independently of pressure. Although the redness might be less intense, + might not continue so long as alone to justify us in calling it Inflammation, yet provided it were in a part which is not naturally red like the cheeks not liable to flushing + rosiness a much less degree of it + much shorter continuance might give us the idea of Inflammation.

Heat.

The body is hotter than the surrounding temperature. A preternatural heat if not very great is not of necessity inflammatory. A certain intensity & a certain duration are necessary to constitute Inflammation, in the case of heat as well as in case of redness. With regards to heat, the temperature of the affected part appears much higher to the patient than it really is. There is in Inflammation a general morbid sensibility of the part & therefore the degree of heat which actually occurs produces greater effects than it would in any other part of the bod.

But although from the morbid

sensibility of the part, the increase of heat appears greater than it really is there can be no doubt that in Inflammation the temperature is raised. The temperature of the body in health is 98 Fahrenheit Mr John Hunter states that he has produced Inflammation in the Rectum + Vagina + that the temperature was but one + a half degree higher than before the Inflammation

Pain.

Many arise from many other causes than Inflammation. For example cramp in the legs nothing is more painful. Frequently neuralgia, depending

on a violent affection of the nerves in which no Inflammation can be dected during life & no effect of Inflammation discovered after death. A part is violent red, and violently swollen without any pain at all, the part is apt to become gangrene.

Character of pain varies with differences in the structure of the part in which it occurs. If the part be unyelding then the pain is of a tense character & great in severity viz Inflammation of the sheath of a tendon, is generally attended with great agony.

From a similar cause, also when

when matter is forming under the periosteum & cannot escape, the pain is most agonizing. There is no remedy save an incision, so as to allow the escape of even smallest quantity of matter and so relieving the tension, the pain instantly disappears.

Incision in certain Inflammation of the skin where the cellular membrane becomes excessively gorged with fluid & the skin is distended over it afford immediate relief. If it be Inflammation inclining to suppuration, the pain is of a throbbing character.

If the skin be affected, the pain frequently assumes a smarting or burning character.

If a mucous membrane be inflamed there is frequently a burning and pricking pain.

Inflammation of a serous membrane is characterised by a stabbing sensation.

Swelling

It may also exist without any inflammation although frequently a symptom of inflammation more frequently than not [illegible] just like an increase of temperature or an increase of redness exist without inflammation. Any injury produces a swelling. As displacement of a part, the dislocation of a bone, or hernia, the effusion of

parts which are natural sensible in health, may become very painful when in a state of Inflammation. The pain of Inflammation is generally increased by pressure especially by sudden pressure. While pain from Spasm is generally relieved by pressure. This is very strickingly shown in Colic and Enteritis. In the latter, the pain procedes from Inflammation + is aggravated by the slightest pressure, while in the former which is spasmodic only, pressure rather diminishes than augments the pain. Inflammation is increased by

pressure; it is due to its sudden
or partial application.
If the pressure is applied slowly
or over the whole surface so as
gradually to empty the capillaries
or diminish their contents, then
little or no tension is produced &
consequently there is little or no
pain. Old inflammation
may be restrained by pressure.
Stiffness of the Joints
It relieves the symptoms of
Inflammation producing the [illegible]
[illegible] of [illegible] [illegible] after
[illegible], expediting the redundant swelling
which might remain.

Pathology.

The blood vessels have contractile power. In the large vessels, it is well established; the capillaries likewise have been proved by Schwan to possess the same power. The action of the capillaries, and arteries, contribute to the circulation in health, + in disease they alter the circulation according as they are constricted or dilated + thus supplying more less blood to the part itself + those parts to which these vessels lead.

With respects to the symptoms of Inflammation. The redness is very easily explained, from the existence of blood in vessels

that ought not to contain it + the existence of too much in those which should contain it.

The dwelling will arise from the same circumstance; and also from the increased secretion that is going on around. The pain will arise from fulness + from the tension of all the parts. This is produced by the accumulation of blood; and by the excessive secretion around. But the pain will arise probably from an increased degree of sensibility.

There is in every case pain from fulness and tension; but the pain is felt far

more liability on account of the increased sensibility.
Heat [illegible] to head. Question it arises from the increased accumulation of blood in the head.
If the same quantity of blood were in the head and [illegible] of course the head would grow cold; but as the blood which is in it far greater number of changes giving rise to heat much like [illegible].
There is far more blood in the head than there should be; & as heat appears to be connected with the quantity of blood which is circulating +

coming around to the lungs & undergoing chemical changes and in proportion to the quan-tity of blood, circulating there must be increased temperature. If the blood ceases to circulate or the circulation becomes lan-guid, so that it does not un-
6 dergo a regular chemical change then [illegible] the part becomes cold. [illegible]
[illegible]
[illegible]
common [illegible]
Common [illegible]
[illegible]
[illegible]

Treatment.

The blood letting, evac-
-nation of the bowels. Abt lesson,
the ordinary stimuli, to which
the body is subjected, both exter-
-nally, and internally.
In some cases we would use
cold, + in others, we would use
warm applications, feelings of
the patient, is always to be
considered. The diet should always
be govern.
Having given an account of
Inflammation, the best of any
ability. I will now leave the
subject to those who are better
able to handle it than myself

who are most competent to enter into the details, and in conclusion permit me to thank you for your kindness since I have been among you, both in the lecture Rooms and the Baltimore Infirmary & also allow me to express my gratitude to you for the many truths which from your long experience as honored Medical men you have so ably considered and endeavored to impress upon our minds, as Medical Students. When I allow my mind to reflect upon these honored halls & think of the many bright stars, which

have gone forth from this institution to adorn the Medical profession & to some who have returned as distinguished Professors, then it is I feel glad that I have made the well known University of Maryland my choice as an institute of learning trusting that it may ever remain as it now does equal to any Medical School. I will again thank you for your kindness & bid you an affectionate farewell.

Very Respectfully
J. M. Cockrill.

To the Faculty of the
University of Maryland.